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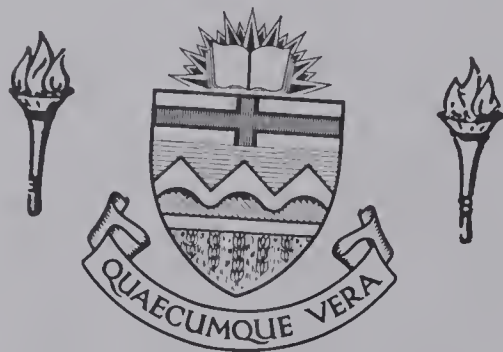
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THE UNIVERSITY OF ALBERTA

BEHAVIORAL AND CLIENT CENTERED  
COUNSELING OF HIGH SCHOOL  
UNDERACHIEVERS

by



W. R. ANDREWS

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES  
IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE  
OF DOCTOR OF PHILOSOPHY

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UNIVERSITY OF ALBERTA  
FACULTY OF GRADUATE STUDIES

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies for acceptance, a thesis entitled Behavioral and Client Centered Counseling of High School Underachievers, submitted by William Robinson Andrews in partial fulfilment of the requirements for the degree of Doctor of Philosophy.



## ABSTRACT

The approach of this dissertation to the improvement of the academic work of underachieving high school boys was based on the theory that a key factor in underachievement is often excessive anxiety. The first and third hypotheses were that behavioral counseling, consisting of a combination of reciprocal inhibition and reinforcement, would reduce the anxiety of the subjects, and that it would do this more effectively than client centered counseling. The second and fourth hypotheses were that the behavioral counseling would result in an increase in the academic course marks of the subjects, and that this improvement would be greater than any improvement resulting from the client centered treatment.

Especially prepared regular school counselors saw students individually in the two treatments.

In order to test the hypotheses, pre-treatment and post-treatment scores on the following measures were compared:

1. The Cattell Anxiety Scale Questionnaire,
2. The Willoughby Personality Schedule,
3. The I-I Inventory, and
4. Four academic course marks.

The results of the experiment indicate partial support for the hypothesis that the behavioral treatment would successfully reduce subjects' high anxiety. The client centered treatment was not successful in reducing anxiety. Neither treatment succeeded in improving academic course marks.



## ACKNOWLEDGMENTS

The advice and encouragement given me during the preparation of this dissertation by Dr. H. W. Zingle will always be greatly appreciated.

The hard work and cooperative spirit of the school counselors who participated in the experiment is also much valued.

The project never would have been attempted or completed without the encouragement and patience of my wife.



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## CHAPTER I

### Introduction

Academic underachievement is a serious problem for a high school student, for his parents, for the educators who work with him, and for the state, which in large measure depends for the quality of its life upon the developed talents of its citizens.

Developing a proposal for alleviating this problem, the present study accepts the following principles: first, that neurotic anxiety and other emotional problems are in many cases important factors in underachievement; second, that a reduction or elimination of the anxiety affects the whole child and all the other factors in his underachievement to an important enough degree that achievement may be expected to improve; and third, that individual counseling competently conducted and using extensions of already developed theories and methods can alleviate or eliminate existing emotional disturbances and help the underachiever to establish improved academic behaviors. These principles are supported in Chapter II, The Problem of Underachievement: Related Research, and in Chapter III, An Approach to the Modification of Underachievement: Theoretical Formulation.

In accordance with these principles, it is proposed that a combination of two behavioral methods of counseling can enable the student to bring about a significant reduction in his anxiety and an increase in his academic marks, and that the changes in behavior so developed will be significantly greater than any such changes brought



about through client centered methods.

The confirmation of this proposal was sought through the carrying out of experimental counseling in two high schools of the Edmonton Public School Board. Students selected according to the design detailed in Chapter V were randomly assigned to two treatment groups and one control group, which were similar in each school. Regular staff counselors of the involved schools gave ten weekly interviews to the subjects in each treatment group. Each counselor dealt with the same number of students in one group that he dealt with in the other.

In order to select subjects for the groups and to detect any changes in anxiety level and marks average, several measuring instruments were used. These included two measures of anxiety or emotional disturbance, a measure of irrational ideas, a measure of verbal intelligence, and course marks.

The purposes of this experimental study may be listed as follows: To attempt a solution to aspects of the problem of academic underachievement, comparing a method which has often been tried with a combined approach which, so far as the experimenter has been able to determine, has not been reported to have been tried previously with high school students or with the problem of underachievement; To establish a beginning on research in behavioristic counseling in this geographical area, from which both the regular use of this approach and further theoretical and practical research may spring.



## CHAPTER II

### The Problem of Underachievement: Related Research

This chapter considers the nature and scope of the problem of underachievement, theories of causation, and previous attempts to eliminate this educational problem.

#### The Nature and Scope of the Problem of Underachievement

The definition of underachievement is an arbitrary matter, and almost every study uses a different criterion to select its underachieving subjects. Fundamentally, however, all acceptable definitions conform to the concept as it is presented by Thorndike (1963).

As a research problem the problem of "underachievement" is one of understanding our failures in predicting achievement and of identifying more crucial factors or additional factors that will permit us to predict it more accurately. The research problem includes also the attempt to identify and manipulate the controllable factors influencing achievement, so that the level of achievement, especially of those doing less than we would expect them to, may be raised (p. 3).

Thus, for example when the expectations or predictions of what a particular student should be able to do in mathematics, based upon various methods of forecasting, fail to be realized, he is likely to be labelled an underachiever.

A broad definition of the underachiever is presented by Shaw (in Miller, L. M., Ed., 1961).





The underachiever with superior ability is one whose performance, as judged either by grades or achievement test scores, is significantly below his high measured or demonstrated aptitudes or potential for academic achievement (p. 15).

An example of the narrower type of definition, which it is necessary to adopt for a particular research study, is given by Raph, Goldberg and Passow (1966).

From an educational point of view, it would include all those students who score in the top decile (or beyond 1.5 standard deviations above the mean) on tests of intelligence and academic aptitude but whose academic performance is at or below the median (or mean) for the general age group (p. 3).

It is useful also to note that, according to the way in which predictions of achievement are arrived at, different types of under-achievers are identified. Four such types distinguished by Shaw (Miller, L. M., Ed., 1961, p. 21) are chronic, situational, and two types of "hidden" underachievers.

The consequences of his condition for the individual under-achiever himself are serious. Although Friedenbergr is passionately opposed to campaigns against underachievement which are motivated by a desire to dragoon the possibly unique, creative and free underachiever back into the ranks of conventionally mediocre achievers (Friedenberg 1965, pp. 186 - 187, 213), he is just as disturbed when the lack of a proper regard for the individual fails to enhance superior talent (Friedenberg, 1959).

For the school, the first step is to increase greatly the emphasis placed on competence. I mean intellectual competence,





particularly, since that has been slighted by the school as well as by the rest of our culture (pp. 216 - 217).

Maslow (1962, pp. 28 ff.) enlarges upon the theme that the development of the abilities of an individual is critical for his own enjoyment of life.

The social implications of underachievement are also important. Impellizzeri (Miller, L. M., Ed., 1961) concludes that the evidence shows that at least during the 1960's there will be enough professional and other highly trained personnel to meet the demand in the United States. She expresses reason for concern, however, as follows:

The shortage we face is of a special kind. We will continue to suffer from an endemic shortage of really first-rate minds in all the learned occupations. There may be enough people with college and professional degrees to sit at every desk, but will these persons have a real capacity to contribute and to lead (p. 2)?

She cites statistical evidence to support her concern.

We cannot afford to waste potential talent. Yet, of the high school students who rank in the top third in intellectual ability, 40 per cent do not enter college. (Wolfe, 1960). Of those who do enter, 60 per cent do not finish college (p. 2).

The conference on the Identification of the Academically Talented Student in Secondary Schools, February 1958, reports that "15 to 25 per cent of the gifted students in most school systems fall into this category (of underachievers), and in some schools the incidence is even higher." (National Education Association, 1958) (p. 2).



A study of 4,900 "bright" high school students recently conducted in New York City (the Talent Preservation Project) reports that 54 per cent of the boys and 33 per cent of the girls had scholastic averages which, halfway through high school, were already so low that their admission to college was in doubt. These students represented the high-ability populations of their classes in 39 academic high schools; and of the 4,900 only 20 per cent were able to complete the first three terms of senior high school without faltering at some point and getting grades below 85. (New York City Board of Education, 1959a) (p. 3).

The literature will now be reviewed which deals with two vital questions: why do some pupils not perform academically up to their measured ability? and, what can be done to alter their pattern of underachievement? The questions will be dealt with in that order, although they cannot be kept completely separate.

### Theories of the Causation of Underachievement

Two very recent clinically and practically oriented approaches to underachievement will be considered first. Thorndike (1963) appears to affirm the importance of clinical and practical approaches.

The causes of "underachievement" are in all probability manifold. Many of these causative factors may well represent contingencies that arise in only a minority of cases. The contingency, or complex of contingencies, may be quite important when it does occur, but occur so infrequently that its influence cannot be convincingly demonstrated by statistical studies. Intensive study of individual cases may generate a high level of intuitive confidence in the importance of some such factor in a specific case. How to verify and test such clinical insights is one of the chronic problems of psychological and educational research (p. 67).



The causes of underachievement fall into four categories, state Bricklin and Bricklin (1967): physical, pedagogic, sociological and emotional causes (pp. xiv, xv). Of these causes they say, "Our data suggest that at least 80 per cent of all underachievers are doing poorly because of emotional tensions (p. xv)." The data referred to emerged mainly from a study of children undertaken largely in terms of Rorschach analyses using the theories of Piotrowski.

The central hypothesis of these authors is that most under-achievers can be described as "passive-aggressive".

The majority of underachievers are hyper-aggressively inclined, but can only express this aggressiveness in limited life areas . . . There is no "total ego" involvement in the aggressiveness of the underachiever (p. xxiii).

The underachiever's anger may be projected into the past, and so away from the ego, or it may not be accepted by him at all, that is, it is consciously unacceptable to him (p. xxiv).

Because of his own underlying aggressiveness, he is in constant fear of aggressive retaliation. Typically the underachiever wants very badly to achieve, but because of his fear of retaliation he is afraid to take the risks of failure, which are consequent upon trying. "This is taken to reflect the fact that the underachiever has overly linked his sense of self worth to his ability to accomplish (p. xxix)."

The underachiever is often a perfectionist, because only when he gains perfection can he feel secure from threat (ch. 27).

Dudek and Lester (1968), after a study of Rorschach and WISC scores of eighty teen-age underachievers, gave strong support to the





Bricklin analysis.

When, as is usual, emotional conflicts are the cause of underachievement, the pupil's self-confidence, study habits, and fund of knowledge all need to be improved. The treatment called for is psychotherapy and tutoring with the child, and psychotherapy with the parents in order to improve home conditions.

Bricklin and Bricklin have much to offer, chiefly in understanding the dynamics of underachievement. They make a convincing case for the position adopted in the present study that anxiety and emotional disturbances of which anxiety is the major component are critical in the genesis and maintenance of underachieving patterns of behavior. Their treatment suggestions, however, appear to consist mainly of transferring their insight to children, parents and educators who are directly involved in an underachievement situation. As will be seen below in a review of experimental studies, attempts like the Bricklins', limited to promoting insight into the problem have generally not proven effective means of attack upon underachievement.

Although he uses different terminology, Fine (1967) is in essential agreement with the passive-aggressive hypothesis of the Bricklins.

Turning to more experimentally oriented studies, it may be noted that in the year 1957, Cattell made the following optimistic statement:

In sum, there is every reason, from the initial findings with factored personality and interest tests, to encourage substantial applied research in their use, with a reasonable hope of now accounting for that greater





part of the criterion variance in school performance which has hitherto completely defied prediction from ability measures alone (p. 788).

Raph, Goldberg, and Passow (1966, pp. 28 - 29) confirm at least the direction of Cattell's prediction when they say that the failure of total adjustment measures to explain underachievement has led to a large bulk of the research now being undertaken in terms of some of the components of personality which may account for the learner's behavior in school.

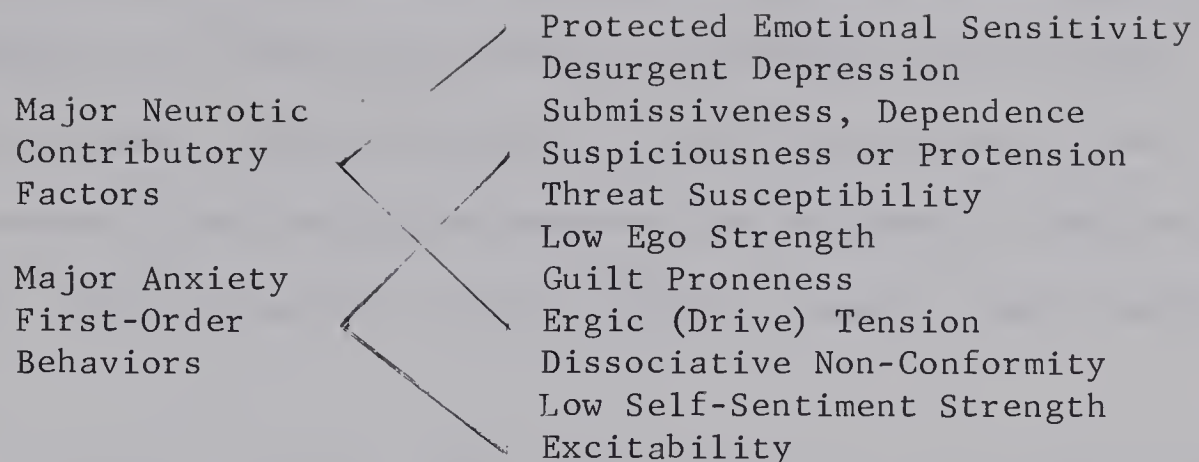
Although many other personality variables have been investigated, such as motivation, self-concept, need-achievement, and interest pattern, an outstanding theme in the literature on underachievement concerns the place of anxiety. The passive-aggressive hypothesis, as already noted, places anxiety in a fundamental position. Raph, et al. (1966) state, "Anxiety, then, may contain some important clues to the disparity between ability and performance which seems on the surface to be so inexplicable (p. 188)." Stevenson (1967) lists some nine research studies since the year 1965, all of which find the trait of anxiety to interfere in one way or another with learning. The relationship between anxiety and underachievement will now be further considered.

Carrying forward their factorial studies of personality, Cattell and Scheier (1961) found the first-order factor-behaviors of neuroticism and anxiety to consist of the following:\*

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\* Adapted from Cattell & Scheier (1961), Diagram 8 - 1, p. 138.





This diagram shows both the elements of anxiety, and the important overlap between anxiety and neuroticism, at least according to the findings of Cattell and Scheier.

When Cattell and Scheier (1961) bring their analysis to bear upon learning, they state, in part:

The best indication of rough average trend, therefore, seems to be that low Anxiety and low neuroticism are associated with scholastic success (implying an educational receptivity, learning ability, etc.) from grade school through college. It must be emphasized, however, that this is only a rough, averaged trend which probably reverses under a number of specific circumstances involving motivational level, difficulty level of material, age, intensity of Anxiety, etc. As for the latter, a moderate amount of Anxiety probably facilitates learning while a very high level almost certainly interferes with it. (p. 264).

A number of representative recent studies further illustrate the conclusion that anxiety is important in underachievement.

Three studies have used the work of Gough and either or both of his instruments, the Adjective Check List (Gough, Heilbrun, 1965) and the California Psychological Inventory (CPI) in examinations of the underachiever.



Davids (1966) found that high school underachievers were high on succorance (i. e. soliciting sympathy, affection, and emotional support from others) and heterosexuality, and low on need for self-control, sense of well-being, achievement via conformity, intellectual efficiency, and on measures of socialization, maturity, and responsibility.

A study of Snider (1966) shows evidence on the predictability of academic achievement and underachievement in a Canadian high school setting, in terms of non-school-test criteria. It also attempts to show the achievement syndrome found in such a high school setting. The key variables in the Canadian high school syndrome were Self Acceptance (negatively weighted), Good Impression, Achievement via Conformance, Achievement via Independence, Psychological Mindedness, Sense of Well Being, and Responsibility (negatively weighted).

A third study using instruments of Gough was conducted by Morrison (1967). She applied six measures to sixty-five fifth-grade boys. Statistically significant findings were "that underachievers reveal a greater amount of hostility towards authority than achievers," and "that underachievers are more passive aggressive as judged by their teachers (p. 1305)."

In spite of one or two unexplained inconsistencies in Snider's results, the close relationship of personality characteristics of the underachiever, as found by these studies, to the Anxiety factors of Cattell is quite clear.

Studies using Gough's work are supported by others, so far as the effects of anxiety on performance are concerned. Faunce (1966)





studied 723 gifted college women who graduated and 526 equally gifted academically who did not.

Scores of the Minnesota Multiphasic Personality Inventory administered during freshman orientation revealed that gifted freshman women who did not persist to graduation showed less insight into their own personality structures, had greater difficulty in interpersonal relationships, had more problems with impulse control, and exhibited greater tensions (p. 252).

Brown (1962), performed an experiment using seventy-eight student teachers. They were subjected to stress in teaching by being told arbitrarily that their first lesson had been a failure, and then being judged on a second lesson. He found that:

. . . it was precisely those placing in the most-neurotic or anxious third who displayed the greatest deterioration in classroom teaching during the second lesson. The middle group declined only slightly. But the groups classified as low-neurotic and low-anxious, as a whole actually improved their teaching after being told their first lesson was a failure (p. 28).

Sarason has performed numerous studies examining the relationship between anxiety and intellectual ability. After a 1959 study involving undergraduate college students, he concluded:

Although all correlations between anxiety and intellectual measures were small, there was a consistent, significant tendency for TA to correlate negatively with the intellectual measures (p. 275).

No similar correlation was observed between a scale of general anxiety and the intellectual measures.

A 1963 study by Sarason extended the earlier finding based upon college students to grade eleven and grade twelve high school students.





The present results provide the strongest support thus far reported for the view that test anxiety scores and intellectual performance are negatively related (p. 74).

Some support was claimed for the 1959 finding of no correlation between general anxiety and academic ability but this support was not conclusive.

Sarason's studies tend to predicate the relationship between anxiety and intellectual performance upon a high degree of specificity, both of the kind of anxiety measured and of the type of subjects involved. This refinement, however, should not obscure the support for the significant negative influence of anxiety upon intellectual performance.

Conclusions indicating a relationship between high anxiety and poor performance have not been arrived at invariably. For example, Ridding (1967), working with 600 boys and girls twelve years of age and over in Manchester schools, stated, in part, "No significant relationship was found between stability and over or under achievement (p. 398)", and "No significant relationship was found between anxiety and over or under achievement (p. 398)."

At least some of the apparently contradictory findings concerning the anxiety-academic achievement relationship can be reconciled if the theories of Easterbrook (1959) are correct. His proposals are based upon a broad field of empirical work, and particularly upon the work of Bruner, Matter, and Papenek (1955). Easterbrook contends that emotional arousal acts to reduce the range of cues that an organism uses, and that the reduced range of cues used may be organizing or



disorganizing, depending upon what behavior is involved. Therefore, ". . . a deficiency of information and an excess of anxiety are functionally equivalent (p. 195)." Further,

On some tasks reduction in the range of cue utilization improves performance. Irrelevant cues are excluded and drive is then said to be organizing or motivating. In other tasks, proficiency demands the use of a wide range of cues, and drive is disorganizing or emotional. There seems to be an optimal range of cue utilization for each task (pp. 197 - 198).

Both the improvement under increased stress of Brown's low-anxious, low-neurotic teachers, and the specificity of the action of anxiety observed by Sarason may be partially explained here. In the case of Brown's study, the low-anxious teachers may have been perceiving too large a range of cues for best performance. The improved performance consequent upon criticism may have resulted from a narrowing of the focus of perception to the teaching task alone.

Sarason (1959) speaks of different types of anxiety, such as test anxiety, achievement anxiety, and general anxiety. When these are paired with intellectual performance, he finds different correlations for each pair. Further, he cautions (Sarason, 1959, p. 275) that his correlations between anxiety and intellectual performance must not be applied to subjects of a different group from the college undergraduates used in his study. If, as Easterbrook proposes, there is an optimal range of cue utilization for each task, the need for Sarason's limitations could be predicted. Different groups of people performing differing tasks may be expected to react differentially to anxiety.

A speculative explanation of Ridding's results is also



suggested. Thus, if tests relied upon in Ridding's experiment were not demanding, anxious students would do well, and little discrepancy would show between their IQ's and their achievement. Low anxious students, on the other hand, would tend to perceive many peripheral but irrelevant cues, thus devoting less than their full capacity to the central easy task. Consequently there would be no negative correlation between anxiety and achievement if the task was easy.

The definition and nature of underachievement has now been given some consideration. Studies have been cited which show, among other things the important role of anxiety in underachievement. Some answer has therefore been given to the first of the two questions posed earlier: Why do some pupils not perform academically up to their measured ability? A brief view will now be given of answers which have been attempted to the second question: what can be done to alter their pattern of underachievement?

#### Attempts to Eliminate Underachievement

A major effort to find a way to modify underachievement was that carried on for five years, 1956 to 1961, at DeWitt Clinton High School in New York, by the staff of The Talented Youth Project of the Horace Mann-Lincoln Institute (Raph, Goldberg, and Passow, 1966). Three related studies, each trying some different methods, worked with 227 underachieving boys and 100 high-achieving boys.

In the Homeroom-Social Studies Class experiment under-achieving boys were placed in one homeroom class so that they could share one another's problems, and were taught in social studies by a





specially selected, supportive teacher.

A second study was designed to meet the challenge of the failure of a large number of high-ability boys in mathematics, and was called The Geometry Special Class. The approach here stressed concept formation as opposed to drill and memorization, emphasized work-study skills, and presented individual enrichment material.

From these two studies it was concluded that help in mastering skills which the underachiever had not mastered in earlier grades, and identification with an especially interested and supportive teacher, were particularly important. A third study, The Group Guidance and Study Skills Special Classes, was designed to use these insights to help groups of underachievers.

Although a good deal was learned about the nature of underachievement, none of these approaches succeeded in bringing about statistically significant improvement of underachieving behavior.

Numerous variations of counseling have been tried with academic underachievers. Moore and Popham (1960) compared individual counseling oriented toward the student's relationship to the subject matter to be covered, with tutorial interviews dealing with current course material.

Martin (1966) tried six individual counseling interviews with one group, and with another group, six counseling interviews augmented by weekly tutoring from honors students.

Long (1966) tried single-interview counseling which included the student's first formal appraisal of his ability and achievement data.





Gunning (1967) compared short-term group conseling with under-achieving high school students, using a client centered approach, with an individual counseling approach described as "diagnostic". Two groups of subjects were each given three on-hour sessions.

Laxer, Kennedy, Quarter, and Isnor (1966) performed an experiment using client centered group counseling with thirteen groups of twenty high school students each.

Laxer, Quarter, Kooman, and Walker (1968) used, in groups of test-anxious secondary school students, systematic desensitization in one treatment condition and relaxation training in another.

Goebel (1966) compared individual counseling, group counseling, and group-followed-by individual counseling.

Klein, Quarter, and Laxer (1968) used group counseling to train underachievers in achievement motivation and moderate risk-taking.

Goodstein (1967) looked for possible "incubation effects" of counseling. He studied the records, five full years after counseling, of 181 students counseled in an original study of Marx (1959). Marx, using four advanced doctoral students in counseling and methods typical of the University of Iowa counseling service, interviewed students according to both group and individual methods.

Although in some cases significant changes were made in personality variables, in none of the studies mentioned so far, including Goodstein's search for incubation effects of counseling, was any significant improvement in the grade-point average of underachieving subjects accomplished.

In spite of the gloomy picture of work with the underachiever



presented to this point, restrained optimism is now justified because a few of the latest studies have yeilded significant improvement in marks.

In a study by Zingle (1965), high school underachievers who had received individual counseling according to the method of Albert Ellis made significantly higher marks than no-treatment controls.

Roth, Mauksch, and Peiser (1967) report successful alteration of academic underachievement patterns using group counseling of a client centered type. Counseling was designed to be a therapeutic intervention to deal with poor study habits, which were conceptualized as a key mechanism of a "non-achievement syndrome". The non-achievement syndrome seems essentially similar to the passive-aggressive hypothesis, which was outlined earlier. It is described as a cyclical dynamic evolving out of immature family relationships and including disparagement, anxiety, functional disability, hopelessness, and frustration.

A striking experiment was done under social work auspices in five Michigan school systems under the direction of Vinter and Sarri (1965). An important feature of the project was this thesis:

It is proposed here that malperformance patterns should be viewed as resultants of the interaction of both pupil characteristics and school conditions (p. 4).

A group work method was used, with five to eight students being grouped with a social worker. Individual work with students was also done. The activities of the social workers in the schools were categorized as direct work with pupils, mediation with teachers and



other school personnel, consultation with teachers with regard to classroom procedures and teacher perceptions, and negotiation with families and agencies in the community.

Tentative results claimed include significant improvement in classroom conduct, and in academic motivation and performance (p. 11).

Working with fifty chronically anxious college males, Paul and Shannon (1966) found a significant improvement in the GPA of treatment groups worked with by the method of individual and group systematic desensitization.

Finally, again working with an anxiety hypothesis, Katahn, Strenger, and Cherry (1966), found that their program had a significant effect on the academic achievement of their college student subjects. They used eight sessions of combined group systematic desensitization and counseling. "Therapy took the form of eliminating some of the old responses and of teaching new responses which were more adaptive (p. 548)."

In view of the successes mentioned, many attempts which accomplished no improvement in academic underachievement should not be looked upon as failures. It has been necessary to learn how to modify certain personality variables, especially anxiety, before academic achievement itself has shown change. This outlook of expecting gradual progress is typified by the statement of Laxer et al. (1968):

Another program currently in progress is designed to rectify some of the present experiment's shortcomings as well as answer some of the theoretical questions raised above (p. 11).





Goodstein (1967) also concluded that lessons could be learned from an earlier study. He noted that in Marx's study (1959) relatively inexperienced counselors were used, the modal number of interviews was only three, the interviews focused upon the rather traditional problems of educational-vocational counseling, the clients were not self-referred, and little or no attempt was made to deal with any covert psychodynamics such as are seen by some to be etiological to underachievement.

It is clear from the research which has been referred to that academic underachievement is a difficult problem. Much effort has been expended in trying to find a solution. Although much of this has had the appearance of failure, it obviously has made possible the advances which have contributed to a few recent successes.

The literature cited also demonstrates strong support for the importance of anxiety, and of emotional disturbances of which anxiety is a large component, as factors in underachievement. Behavioral approaches to counseling which are designed especially to eliminate maladaptive anxiety may therefore be uniquely valuable in any plan to help the underachiever to improve.





## CHAPTER III

### An Approach to the Modification of Underachievement: Theoretical Formulation

Chapter III presents the theories of reciprocal inhibition and of operant conditioning. It shows that counseling based upon the combination of these two approaches to behavior modification can be expected to be effective in the amelioration of academic underachievement.

Client centered counseling has also been used in this experiment in the treatment of underachievers. A relatively brief treatment of this approach is to be found in Appendix A. It has not been enlarged upon here because it has already been the subject of many years' discussion and research.

#### Reciprocal Inhibition

In the view of Joseph Wolpe, the neuroses are primarily a product of learning, and not of either maturation or lesions. In this view he was influenced by Pavlov, who developed the conditioning model of learning, and by Hull, who considered drive reduction to be an essential part of the learning process. A neurotic behavior is learned, accordingly, when it is temporally paired with a noxious stimulus which is brought to bear upon the organism, and when it is selected to be the response because its occurrence is followed by a removal of the noxious stimulus and the drive created by that stimulus (Wolpe, 1958, pp. 22 ff.).



Other, non-neurotic behaviors may be learned in this same fashion. But the distinction between what is neurotic and what is normal is clear, at least in theory.

Neurotic behavior is any persistent habit of unadaptive behavior acquired by learning in a physiologically normal organism. Anxiety is usually the central constituent of this behavior, being invariably present in the casual situations (Wolpe, 1958, p. 32).

Through the process of generalization, other responses which occur in contiguous relationship with already established anxiety responses, and which are drive reducing, can in turn become stimuli for new anxiety responses.

Physiological differences established through maturation predispose some individuals more than others to react emotionally to anxiety-evoking stimuli such as pain, very intense stimuli, conflict, and confinement. A neurosis must nevertheless be learned (Wolpe, 1958, p. 76 ff.).

Most learned responses which are unadaptive and unrewarded soon extinguish through a fatigue-associated mechanism, and because they are not reinforced. Unfortunately, at least two factors cause anxiety responses to be unusually persistent (Wolpe, 1958, p. 66). One is that anxiety responses frequently lead to avoidance responses, with consequent drive reduction and reinforcement of the anxiety. The other is that the large autonomic element in most anxiety responses results in less of the fatigue-related inhibition than is produced by more musculo-skeletal responses.

Because neurotic responses are learned, Wolpe tried to



develop a method by which they could be "unlearned". Working with the principles of learning, Wolpe noted that in the year 1924, M. C. Jones had overcome fears in young children by giving them food to eat at progressively smaller distances from a feared object. In numerous experiments with cats, Wolpe confirmed and extended the learning principles which seemed to be involved in Jones' experiment.

The principle of counterposing an apparently antagonistic response to anxiety was transferred to an application with humans, not using feeding responses, but certain more convenient responses including assertive, sexual, and especially relaxation responses.

Wolpe (1958) developed a precise and effective procedure for the therapeutic application of incompatible responses to human neurotic anxiety, a procedure which he called reciprocal inhibition.

The procedure of reciprocal inhibition or systematic desensitization has been presented in detail in Appendix B. In brief outline, however, it may be noted that among the first steps is training of the subject in a much shortened version of the muscular relaxation exercises of Jacobson (1938). Through discussion and questionnaires, the particular neurotic anxiety stimuli are identified; and these are then sorted into lists having a similar nature or theme. Before the desensitization begins, the subject carefully orders each of these lists so that the degree of intensity of disturbance is graded evenly from the least disturbing item to the most disturbing, producing a hierarchy of anxieties.

The desensitization begins with the subject in his most relaxed state, a condition usually augmented, in Wolpe's practice, by





hypnosis. The disturbance produced by the weakest item from the particular hierarchy which has been selected to be dealt with first is elicited by having the subject imagine the situation involved. Once the anxious response attached to a stimulus scene is inhibited or extinguished by the presence of the dominant and incompatible relaxation, the next more disturbing item of the hierarchy is presented, and so on up the list. Through generalization, the new more relaxed response decreases the intensity of the closely related anxiety situation which is next up the list, so that it, in turn, can be overcome by the relaxation induced in its presence. The stimulus situations freed in this manner from unadaptive anxiety in the therapist's office, are held by Wolpe to remain free of neurotic anxiety in the subject's outside life situations.

#### Research Support for Reciprocal Inhibition

A very considerable body of both clinical and experimental research support for the effectiveness of reciprocal inhibition has now been built up. Two prominent clinical assessments of psychotherapy by reciprocal inhibition are those of Wolpe himself and of Arnold Lazarus.

Wolpe (1958) systematically evaluated therapeutic outcome in the cases of three series of patient groups. After excluding from the study psychotics, psychopaths, and patients who had not had an "adequate" amount of therapy, Wolpe considered two hundred and ten patients who had a wide variety of neuroses. The mean number of interviews for the first two series was 26, and for the third series, 45.6. Wolpe concluded,





"The general average of about 90 per cent of highly favorable outcomes has been maintained (p. 216)." Amongst forty-five of these patients who were followed-up for from two to seven years after treatment, only one moderate relapse occurred.

Also assessing his patients, but in a more rigorous fashion than Wolpe, Lazarus (1963) reported 61.9 per cent markedly improved or completely recovered in a mean of 14.07 sessions. Amongst these comparatively difficult subjects, a two-year follow-up showed only one relapse and no evidence of symptom substitution. It is noteworthy that some patients who recovered in fewer than six sessions, those under fifteen years of age, and people with monosymptomatic disturbances were all excluded from this study.

An abundance of experimental research has now accumulated, pointing to the effectiveness of reciprocal inhibition in psychotherapy. A few of the more prominent studies will now be cited.

An important early experiment was that of Lang and Lazovik (1963) with twenty-four snake phobic subjects. Significant decrease in the phobia was obtained. This decrease was found to be maintained at a six-month follow-up evaluation, and showed no evidence of symptom substitution.

Davison (1968), in the course of an experiment designed to demonstrate a counterconditioning explanation of reciprocal inhibition, obtained significant results confirming both his counterconditioning hypothesis, and the effectiveness of systematic desensitization as a means of reducing snake phobia.

Emery and Krumboltz (1967), using a group procedure in



desensitization, found test anxiety significantly reduced in the subjects of their treatment.

Paul and Shannon (1966) compared individual desensitization, group desensitization, insight therapy, and attention-placebo in the treatment of fifty chronically anxious college males. Significant change in grade-point average occurred in both desensitization groups, but in neither of the other groups. The authors state:

The present results do suggest, however, that group desensitization need not be limited to treatment of specific phobias, but that it is also effective in treating more generalized social-evaluative anxiety (p. 133).

Some other behavior therapy experiments have also shown success with the highly complex task of obtaining improved academic achievement.

In a treatment group combining group desensitization and group counseling, test anxious college undergraduates significantly improved their academic performance; whereas controls showed no improvement. The authors, Katahn, Strenger, and Cherry (1966) state that the desensitization was used to bring down test anxiety, and the counseling to teach new academic skills.

Johnson and Sechrest (1968) found that high test-anxious college students who received systematic desensitization obtained significantly higher academic course grades than did groups receiving only relaxation and no treatment.

Perhaps the outstanding experiment performed to evaluate the outcome of behavior therapy is that of Paul (1966). This study was extremely well designed and executed, and is considered by Jerome



Frank (1968) to have "plugged all the loopholes to my satisfaction."

The therapeutic task was the alleviation of the debilitating anxiety of college students required to take a course in public speaking. Seventy-four volunteers were placed in four groups: individual systematic desensitization, insight-oriented psychotherapy, attention-placebo treatment, and no treatment. Twenty-two others constituted a no-contact control.

Experienced therapists worked for five sessions with each treated subject.

Elaborate physiological and psychological anxiety measures showed the systematic desensitization group to be consistently superior. No differences appeared between the effects of insight-oriented psychotherapy and the attention-placebo treatment, although both of these showed greater anxiety-reduction than the no-treatment controls.

At a six-week follow-up, improvement was found to have been maintained, and there was no evidence of symptom substitution.

It was concluded, in part, that ". . . treatment based upon a learning model is most effective in alleviating anxiety of a social-evaluative nature . . . (p. 99)".

After two years, Paul (1967) conducted a major follow-up assessment of the subjects of the outcome study. He found that reduction originally achieved in interpersonal performance anxiety had been maintained, and that the position of the groups relative to one another was unchanged from two years before. Although it was sought, no evidence of symptom substitution was found.

As there is now a widespread acceptance of the effectiveness





of psychotherapy by reciprocal inhibition, a good deal of research interest is focusing upon refinements and varieties of the technique, upon the nature of the mechanism involved, and upon the integration of reciprocal inhibition with other forms of therapy, especially other forms of behavior therapy.

Many studies are being done using group forms of desensitization (e. g. Katahn, Strenger, and Cherry, 1966; Paul and Shannon, 1966; Emery and Krumboltz, 1967; Laxer, Quarter, Kooman, and Walker, 1968). Lazarus (1968) has been active in experiments investigating the ability of "emotive imagery" and "cognitive variables" to enhance the power of systematic desensitization. Agras (1967) has studied the importance of reinforcement by the therapist to the transfer of desensitization effects to situations outside the therapist's office. Study of the mechanism of desensitization, and of its integration with other techniques, have opened paths to a myriad of new forms of therapy.

#### The Mechanism of Systematic Desensitization

Wolpe (1958) describes his reciprocal inhibition principle as follows:

If a response antagonistic to anxiety can be made to occur in the presence of anxiety-evoking stimuli so that it is accompanied by a complete or partial suppression of the anxiety responses, the bond between these stimuli and the anxiety responses will be weakened (p. 71).

Fundamental to this mechanism are the theories of reinforcing drive reduction of Hull, and Sherrington's account of the reciprocal





inhibition of one spinal reflex by another. Accordingly, a conditioned neural inhibition of an anxiety response may be engendered by the simultaneous presentation of an incompatible response such as relaxation. The consequent reduction of the anxiety drive reinforces or conditions the neural inhibition which caused that reduction (Wolpe, 1958, pp. 24 - 31).

Responses which largely involve the parasympathetic nervous system, such as relaxation responses, are especially likely to be incompatible with the predominantly sympathetic responses of anxiety. This difference is not necessary, however, for the effectiveness of all mutually antagonistic responses.

At least three alternatives have been proposed to Wolpe's own model of systematic desensitization. One is the attempt to explain the method in purely cognitive or insight terms. Toward this end a speculative account has been put forward by Perry London (1964), and an experimental demonstration has been attempted by Folkins, Lawson, Opton, and Lazarus, R. S. (1968). To settle in empirical terms the argument between the cognitive and behavioral schools of psychology is probably not possible, at least at this stage in the development of knowledge. Little purpose relevant to the present discussion can be served by delving into the matter.

Lomont and Edwards (1967) investigate a second alternative to Wolpe's model. This is the possibility that what takes place in desensitization is simply classical extinction, with the evoked fear responses repeatedly occurring without reinforcement by noxious consequences. Because subjects in a group which received presentations



of graded anxiety stimuli without relaxation, which is pitted against anxiety in Wolpe's desensitization, showed less improvement than a group receiving both graded stimuli and relaxation, the authors concluded that reciprocal inhibition is the preferable explanation of systematic desensitization.

Wagner and Cauthen (1968) proposed that therapeutic change in systematic desensitization can be most easily explained in terms of positive reinforcement. They conjectured that essential to the procedure is the relationship of therapist to client. The relaxation response of the subject, in contiguity with the therapist's presence, creates a positively reinforcing situation. The reinforcing valence of the therapist then is used in the encouragement of the client to remain anxiety free in the face of increasingly anxiety-provoking stimuli. Unfortunately, the results of the authors' experiment to demonstrate their point were inconclusive.

Lader and Wing (1966) put forth a hypothesis, later enlarged and developed by Rachman (1967), and Lader and Mathews (1968), which may constitute the major alternative to Wolpe's own theory. This new physiologically-based theory suggests that systematic desensitization may be the habituation of anxiety responses carried out when the rate of habituation is maximal. The theory regards anxiety as the subjective experience of excessive and prolonged physiological activity, or high arousal. As habituation rate is highest when arousal or anxiety is lowest, desensitization occurs because anxiety stimuli, which are presented in small doses under the low arousal conditions by the instructions and training in muscular relaxation, are rapidly habituated.



Classical conditioning theory is related to this hypothesis through its partial explanation of the genesis and maintenance of anxiety. High arousal level may be attributed to a genetically derived low habituation rate (Lader and Wing, 1966, p. 143) along with widespread stimulus generalization of anxiety. Such generalization would occur readily because of the high rate of conditioning at high levels of anxiety (Eysenck and Rachman, 1965; Lader and Wing, 1966).

This hypothesis is, as Lader and Mathews (1968) point out, "highly speculative at the present time," but, apart from practical values, it has the advantage of avoiding two theoretical difficulties of Wolpe's position. One of these involves his alleged emphasis upon the muscular component of relaxation (Davison, 1966; Lader and Mathews, 1968). Davison (1966) inferred, from empirical findings affirming the conditionability of anxiety under muscular paralysis induced by curare, that muscular relaxation as such is not incompatible with anxiety. Wolpe's position has also been criticized on the ground that his use of Sherrington's concept of reciprocal inhibition involves a basic distortion of that concept (Lader and Mathews, 1968; Davison, 1968).

A considerable number of differing practical emphases in systematic desensitization called for by the Lader-Wing hypothesis are discussed by Rachman (1967), and Lader and Mathews (1968). Rachman says, for example, "In practice, we would place greater emphasis on the feeling of calmness (p. 164)". Like the theory itself, however, these implications require further demonstration and development.







### Operant Conditioning

In this experiment in the modification of academic underachievement, reciprocal inhibition will be combined with positive reinforcement. Operant conditioning or reinforcement provides powerful means for the shaping of new, desired behavior (Skinner, 1963), and has consequently been widely used in such endeavors as education and the psychotherapy of psychotics. It has been less used in the therapy of the neurotic than has reciprocal inhibition, no doubt partly because effective reinforcements are less under the control of the therapist in the case of non-institutionalized neurotics than they are in the cases of children and adults in schools and mental institutions. In the opinion of the experimenter, however, there is untapped potential for therapeutic change in the use of operant conditioning in counseling in the open community. The present experiment may provide evidence in support of this statement.

This experiment makes use of a device originated by Keutzer (1967), consisting of time allowed in therapy as a reinforcement. Keutzer obtained excellent results in his attempt to increase the amount of studying done by a highly anxious, neurotic woman who was unable to complete her university training. Time allowed in therapy, which the client wanted, was made contingent upon an increasing amount of studying being done. Otherwise, Keutzer says (1967, p. 367), therapy was conducted upon "traditional" lines.

Skinner (1963) is critical of what he terms the circumvention of an operant analysis.



In particular, verbal communication between subject and experimenter is widely used in lieu of the explicit arrangement of contingencies of reinforcement and the objective recording of behavior (p. 509).

Keutzer's client was instructed about the reinforcement contingency, but the explanation was in no way a substitute for the actual contingency.

In applying Keutzer's device as a reinforcement for improved attendance and increased and improved study on the part of the under-achieving subjects, it was considered that in the present experiment also time in therapy would be reinforcing to the subjects of the experiment. The topic of reinforcement is further discussed in Appendix B.

#### Overcoming Underachievement by a Combination of Techniques

The theory adopted by the present experiment for the modification of underachievement is that unadaptive anxiety must be dispelled and that new, successful academic behaviors must be established. A combination of the techniques of systematic desensitization and of operant conditioning seems uniquely suited to the achievement of these objectives. As has been shown, ample support exists for the role of anxiety in underachievement (Bricklin and Bricklin, 1967; Cattell and Scheier, 1961; Entwhistle, 1968, etc.). The capability of reciprocal inhibition in the alleviation of anxiety has been discussed. And the value of operant conditioning in the formation of new behaviors has likewise been indicated. This combination of techniques is justified



for both theoretical and practical reasons.

In many forms of neuroticism, when the sufferer is treated by systematic desensitization, his improved performance at home and at work is likely to receive immediate social reinforcement. Reinforcement for improvement in behaviors which are a necessary prelude to academic improvement, however, is apt to be slow in coming, whether it is in terms of personal satisfaction or social approval. Assistance in the development of new behaviors may consequently add much to the effectiveness of treatment in dealing with such problems as underachievement. Operant reinforcement incorporated into the treatment may be effective in providing this assistance. A number of researchers, such as Lazarus, Davison, and Polefka (1965); Goodstein (1965); and Katahn, Strenger and Cherry (1966) have come to similar conclusions.

If Agras (1967) is correct, the positive reinforcement of the client by the counselor will perform the additional function of promoting the transfer of the new non-anxious responses instilled by desensitization from the disturbing stimuli imagined in the counseling office to the original stimuli in the outside world.

Reese, (1966) contends that "Emotional behavior is as complex as it is important, and it seems to include both operant and respondent components (p. 12)". It is, therefore, appropriate to combine reinforcement, which strengthens operant behavior, with reciprocal inhibition, which deals directly with respondent behavior. Giving further support to a combination of this type is the declaration of Lazarus (1967): "The view upheld is that therapeutic competence depends upon an array of effective techniques rather than upon a mass of plausible theories



(p. 415)".

Although Lazarus, Davison, and Polefka first used both classical and operant conditioning procedures in the treatment of a neurotic, the present study, so far as the experimenter can determine, is the only use so far of this combined technique with secondary school students and with the problem of underachievement.





## CHAPTER IV

### The Presentation of the Hypotheses

In Chapters II and III it has been shown that underachievement is an important problem affecting both society and the lives of many young people. It has also been shown to be a complicated problem which is very difficult to overcome.

Many factors appear to contribute to the nature of underachievement, including parental attitudes, teacher attitudes, instructional techniques used in the school and general school environment, and failure experiences. It would, of course, be desirable to eliminate the destructive aspects of all external influences upon children. But the fact that this seems to be a practical impossibility should not lead to the conclusion that nothing effective can be done to alter patterns of underachievement. If all environmental factors cannot be altered, it would seem logical, in order to modify underachievement, to attempt to change some critical environmental factor or factors, and at the same time to try helping the underachiever to change his typical responses to the academic process.

It is possible that reinforcement of academic activities is just such a critical environmental factor; and that the reduction of excessive anxiety may be the assistance the underachiever needs in order to alter his maladaptive academic responses.

Theoretical formulations and research support have been presented in the foregoing chapter for reciprocal inhibition, operant conditioning and their functional combination. Together, these



techniques can be expected to provide the underachiever with new rewards, and to reduce his level of anxiety. That this combination of counseling approaches will significantly modify patterns of academic underachievement seems both a reasonable and a testable conjecture.

Although they have yielded much knowledge about the nature of underachievement, the large number of studies attempting to modify this problem through the use of client centered and other "insight therapies" (London, 1964) have not produced satisfactory results. Raph, Goldberg, and Passow (1966), whose extensive review of the literature concerned with the counseling of underachievers consists entirely of studies using various forms of insight therapy, sum up the situation as follows:

The experiments described here, as well as the impressions of people who have worked with gifted underachievers in classes and in counseling relationships, suggest that efforts initiated at the senior high school level show little promise of success (p. 179).

One of the things learned from a great many tries with underachievement using insight approaches would seem to be that these methods generally lack the power to produce the desired results. The application to the problem of underachievement of newer counseling methods which have shown success with other problems seems now to be indicated.

### Hypotheses

Hypothesis 1. Anxiety will be reduced for Grade X and XI boys having above average academic ability, relatively high general



anxiety, and who voluntarily accept treatment, through a program of individual counseling given by regular school counselors using the behavioristic methods of Joseph Wolpe combined with operant conditioning.

Hypothesis 2. The mean of academic course marks will be raised for Grade X and XI boys having above average academic ability, relatively high general anxiety, and who voluntarily accept treatment, through a program of individual counseling given by regular school counselors using the behavioristic methods of Joseph Wolpe combined with operant conditioning.

Hypothesis 3. The Behavioral Treatment Group will be superior to the Client Centered Treatment Group in effectiveness in reducing the anxiety of the underachievers.

Hypothesis 4. The Behavioral Treatment Group will be superior to the Client Centered Treatment Group in effectiveness in raising the mean of academic course marks.





## CHAPTER V

### The Experimental Design

In the present chapter the method is described according to which the four hypotheses stated in the last chapter were tested. The following aspects of the experiment are discussed: the pilot study, the sample, the formation of groups, the treatments, the counselors, and the measuring instruments.

#### The Pilot Study

Pilot work in preparation for the research study was done by the experimenter during May and June, 1968, at one of the schools which was to be involved in the main project.

Two underachievers were selected, and were counseled according to the methods of Treatment Group 1 (combined reciprocal inhibition and operant condition).

Both students, who were offered the treatment by letter, accepted it. One student, according to both the counselor's assessment and the anxiety scale scores, was non-anxious. Although he afterwards declared that the counseling had been worthwhile to him, his lack of more than a superficial motivation for taking the treatment made counseling difficult. As a result of this observation during the pilot study, it was decided that students who appear to be low anxious would not be included in the research project.

The subjective assessment of the experimenter and the pre-treatment anxiety measures indicated that the second student had severe



anxiety or neurotic problems.

Both students had trouble concentrating and did very little homework. On the other hand, the attendance of both was good.

Hypnosis is frequently used by Wolpe (1958) to help the subject relax. For practical reasons hypnosis was not used in the schools, but both students carried out the required practice and became able to achieve fully satisfactory relaxation.

Careful measurements were not made, but the experimenter's subjective assessment of the effectiveness and practicality of the method in the school confirmed his view that a formal study of this approach to underachievement was desirable and practicable.

### The Sample

The subjects were chosen from a total of 1220 grade X and XI students in two schools, Harry Ainlay Composite High School and Queen Elizabeth Composite High School, both in Edmonton, Alberta. Subjects were selected for the project only if they were male, had an above-average IQ, were on a matriculation program, had course marks below the expectancy established by their IQ, had relatively high anxiety, and volunteered for counseling.

### Steps in Identifying Subjects

1. Verbal IQ scores, yielded from an earlier routine administration by staff counselors of the Lorge-Thorndike Intelligence Tests, were recorded for all students taking the matriculation program in grades X and XI in the two schools. Calculated separately for each



grade in each school, these scores were converted to normalized T scores having a mean of 50 and a standard deviation of 10.

2. The mean of four course marks from the early November Mid-term examinations was calculated for the students referred to in Step 1. The course marks were those given in four subject areas invariably taken by students on the matriculation program, namely, English, social studies, mathematics, and science. Separately for each grade in each school, these means were then converted to normalized T scores having a mean of 50 and a standard deviation of 10.

3. Normalized T scores for course marks means were then subtracted from normalized T scores for IQ's, to obtain Discrepancy Scores.

4. Male students with IQ's above the mean, who had the 24 highest Discrepancy Scores in each grade in each school were identified. At this point, with 24 students having been selected from each of grades X and XI in each school, 48 students had been identified in each school, for a total of 96. These 96 students were then given the Cattell Anxiety Scale, the Willoughby Personality Schedule, and the Irrational-Ideas Inventory. Twice as many subjects as were needed for the experiment were given these instruments so that students with low anxiety could be excluded, and in order that any students who declined to take counseling could be replaced. Students were informed at this time only that their names to the questionnaires were desired as part of a research project.

5. After the elimination of two students who were younger than the typical age for their grade, the 12 students having the highest





scores on the Cattell Anxiety Scale in each grade in each school, or 48 in all, were chosen from the 96 who completed the questionnaires.

6. The Cumulative Record files, kept for each student during his stay in the school system, were then carefully checked to see if any of the 48 students had been identified as having a physical or other disability which would be a handicap to him in learning, and to ensure that the duration of the underachievement extended back at least over the junior high school years. No subjects were eliminated as a result of this procedure.

7. The 48 students were next approached by means of a letter (Appendix E), which in one school was discussed in an interview conducted by a staff counselor with each student, in which students were informed of their IQ percentile and marks' average percentile, and were told that their score was relatively high on the anxiety questionnaire. They were invited to participate in special counseling. All of the 48 students accepted the invitation with the exception of one, who declined on the advice of a school psychologist who had already begun counseling with him. The invitation given to him was extended to another student in accordance with Steps 4 and 5.

The resulting experimental sample had the following characteristics, in terms of raw scores:

Range of scores on IPAT Anxiety Scale Questionnaire	33 to 61
Mean of scores on IPAT Anxiety Scale Questionnaire	44.11
Range of scores on The Clark-Thurstone Inventory	20 to 86
Mean of scores on The Clark-Thurstone Inventory	45.00
Range of scores on the I-I Inventory	321 to 574





Mean of scores on the I-I Inventory 381.39

In terms of normalized T scores, the sample had the following characteristics:

Range of Discrepancy Scores	8.5 to 30.9
Mean of Discrepancy Scores	17.99
Range of IQ scores	50.00 to 74.79
Mean of IQ scores	59.84
Range of marks' means	20.64 to 58.16
Mean of marks' means	41.84

### The Formation of Groups

In each school the 24 subjects were randomly assigned to one of three groups, two treatment groups and one control group. The randomization was limited only by the procedure being designed to assign equal numbers from each grade to each group. A table of random numbers was used (The Rand Corporation, 1955).

Counselors were assigned to the students of the two treatment groups in such a way that each of the four counselors in each school worked with two students from each of the treatment groups. The assignment was carried out through the use of a table of random numbers (The Rand Corporation, 1955).

### The Treatments

Three groups were constituted in each school, with eight subjects in each group in each school. For the statistical analysis, Treatment Group 1 in one school was combined with Treatment Group 1 in



the other, giving a total n of 16 for this treatment. The other two groups were considered in the same way in the analysis. The groups in each school, were a behavioral group, designated Group 1, a client centered group, Group 2, and a control group, Group 3. Ten weekly interviews of approximately 45 minutes each were held with subjects of the treatment groups in the period between the Christmas break and the Easter examinations held late in March. All interviews took place during school hours. Tape recordings at randomly selected times were made of two of each counselor's interviews. One of the two recordings represented the counselor's performance with the behavioral treatment, and the other, his performance with the client centered treatment. The experimenter discussed the tape recordings of both treatments with the individual counselors. Counselors also kept brief interview notes. The theory and practice of the two treatments had been fully considered in Chapter III and Appendices A and B, and need not be further elaborated here.

Further comment does need to be made, however, about the control group. It is desirable that the controls belong to the same population as the treatment groups. This was accomplished by the selection procedures already outlined. The problem of what to do with control subjects who need treatment and volunteer for it was dealt with by informing all subjects before they volunteered that a few would have to wait for treatment until after Easter, but that those having to wait would gain the advantage of what the counselors learned from working with the first groups.



### The Counselors

Counselors working with the treatment groups were members of two well-established counseling departments having a tradition of the employment of trained counselors. Five of the counselors were trained at least to the level of the Graduate Diploma in Counseling of the Department of Educational Psychology, University of Alberta, and three were just short of the Diploma and were still pursuing studies toward it. Experience in counseling ranged from half a year to seven years, with an arithmetic mean of 2.9 years experience.

It was made optional for counselors to participate in the project, but all four counselors in each school agreed.

In order to establish the initial orientation of the counselors, the Therapist Rating Forms of Paul (1966) were filled in by the counselors before the beginning of the counselor preparation for the project. Two of the questions were:

A. Indicate in order, the three authors who have been most influential in shaping your present approach to psychotherapy. B. Indicate the "school" or "schools" of psychotherapy to which you feel most related (pp. 110 - 113).

Five out of eight counselors answered in first place either Rogers to A. or Rogerian to B., or gave both these answers. Of the others, one answered Maslow, Rogers and Allport to A. and Third Force and Rational Emotive to B.; the second gave Maltz, Psychocybernetics to A. and Third Force to B.; and the third answered in first place Freud to A. and Adlerian to B. The answers to the more specific questions about theory and technique were largely consistent with these answers.





Evidence from the questionnaire clearly indicates that before the project the counselors were characterized by a training, reading, operational and theoretical orientation which can be described generally as an insight approach, and usually as specifically client centered.

The experimenter considered the treatment methods with the counseling staffs in two, two and one-half hour sessions.

Treatment manuals (Appendices A and B) dealing with both treatment methods were made available to the counselors prior to the discussion sessions.

At least once per week during the treatment period, the experimenter visited each school to discuss with counselors any specific difficulties and general progress in each treatment group. Sometimes these visits took the form of a meeting with the counselors as a group, and sometimes of consultations with individual counselors.

### The Measuring Instruments

#### The Lorge-Thorndike Intelligence Tests: Verbal Battery

In both schools counselors routinely administer The Lorge-Thorndike Intelligence Tests to all Grade X students. The scores obtained in this way for the Verbal test were used in this experiment.

Reliability. For alternate forms, with an interval of a week, a test-retest reliability of .858 is reported in the Technical Manual (1954), along with an odd-even reliability of .882.

Validity. Taken from a considerable body of evidence in the Technical Manual (1962), it is relevant to note that with 141 Grade



XI cases, the Verbal Battery correlated .90 with the Composite Score of the Iowa Tests of Educational Development.

Also reported was a correlation of .84 with the Otis Quick-Scoring Mental Ability Test, based on 486 Grade XI students (Technical Manual, 1962).

Further to support the validity both of using this test in the present project and of using the Verbal Battery alone, it is relevant to quote the Examiner's Manual (1957):

Setting Standards of Expectancy for the Individual Pupil: Probably the most general use of intelligence test results has been to help teachers set standards of expectancy for each pupil. Teachers will probably find that the Verbal Battery of the Lorge-Thorndike Tests is most useful for this purpose (p. 15).

#### Academic Course Marks

The instrument chosen to measure achievement was teacher-assigned academic course marks. The arithmetic mean of marks made on courses in four subject areas on the early November tests was compared to the mean of marks made on the same courses on the late March tests. The subject areas were English, social studies, mathematics and science.

It would have been possible to use standardized achievement tests to identify subjects and measure achievement change. This was not done, however, because the problem of underachievement, as it confronts educators and society, is chiefly not with superior students who do poorly on standardized achievement tests, but with superior students who do poorly on regular course grades. Research indicates that a result of using these two types of measure is that two different



populations will be selected (Shaw, in Miller, Ed., 1961; Wellington and Wellington, 1963; Zingle, 1965). If standardized achievement tests were used, and if a treatment were found to produce improvement, it would remain to be demonstrated that the treatment would also produce improvement in the somewhat different population which constitutes the main problem.

### IPAT Anxiety Scale Questionnaire

All the subjects were underachievers of some years' standing, in terms of IQ scores and course marks. Marks assigned for courses generally, and in particular those which were used as measures in the present project, are based not only upon the results of formal tests, but also upon class work and various home assignments. It was therefore considered more likely that general anxiety rather than narrowly defined test anxiety would be etiological for the underachievement. Tests were chosen accordingly. That the IPAT meets the need of this research project can be seen from the authors' (Cattell & Scheier, 1963) description of the instrument:

The IPAT Anxiety Scale is primarily designed to measure free-floating, manifest anxiety level, whether it be situationally-determined or relatively independent of the immediate situation (p. 13).

Reliability. The reliability of the IPAT Anxiety Scale Questionnaire is stated in the Handbook (Cattell and Scheier, 1963) as .93 on a test-retest basis with a one-week interval using 87 male and female adults, and .87 on a test-retest basis with a two-week interval using 277 Japanese university students. Recent data





(Scheier, Ed., 1967) which is more relevant to high school students is the test-retest reliability of .78 reported as a result of administering the Anxiety Scale to 78 adolescents, with a three-day interval between testings.

Validity. "Construct or Concept Validity is estimated at +.85 to +.90 for the total Scale (Cattell and Scheier, 1963, pp. 7, 8)." External concrete validity on a psychiatric criterion ranges between .30 and .40. The level of the latter two correlations is necessarily low, the test authors say, because of "diagnostic disagreements between clinicians".

#### The Clark-Thurstone Inventory (The Willoughby Personality Schedule)

The Clark-Thurstone Inventory, developed by Willoughby (1932) as a revision of The Thurstone Personality Schedule, is regularly used by Wolpe in the course of his psychotherapy with patients. Wolpe (1958) describes this schedule as ". . . a test for neuroticism, i. e., persistent unadaptive anxiety reactions; and the neuroticism revealed by the questionnaire relates mainly to common types of social situations (p. 107)".

Reliability. A test-retest reliability of .87 was reported after the testing of 178 University of Pittsburgh students of both sexes. The length of the period between tests was not given (Willoughby, 1934).

A test-retest reliability of .95 was reported after testing 46 University of Buffalo students of both sexes. The length of the period between tests was not given (Willoughby, 1934).





A test-retest reliability of .89 was reported after testing 36 University of California students of both sexes. The interval between tests was two and one-half months (Willoughby, 1934).

Although no reliability information is reported which is based upon adolescent subjects, Wolpe (1958) reports using this inventory with 11 and 14-year-old boys. The experimenter has found in his own use of this inventory with adolescents that high school students have little trouble in understanding and completing the instrument, and no more trouble than adults have.

Validity. Willoughby analyses the instrument's validity only through comparing each item with the total score, thus deriving a measure of internal consistency. Commenting upon lengthy tables of correlations, Willoughby states, "It is evident that there is a reasonably close relationship between the diagnostic value of the items and that of the scale as a whole (p. 92)". Concerning the nature of the instrument and its validity, Wolpe, (1958) states, ". . . positive answers to questions on the Willoughby schedule to a great extent indicate neurotic anxiety as defined in this book . . . (p. 109)".

### The I-I Inventory

Ellis (1962) proposed that 11 irrational ideas are more prevalent in the behavior of neurotics than they are in the behavior of normal people. The items of Zingle's (1965) I-I Inventory were elaborations of Ellis' 11 irrational ideas. In several studies this instrument and its underlying theory were supported. Thus Zingle (1965) showed that underachieving students scored higher (i. e., higher



on irrational ideas) than average students. Conklin (1965), using a short revision of the I-I Inventory with 726 grade X and grade XI students found support for Zingle's conclusion that underachievers possess irrational beliefs to a greater degree than do other students. Hoxter (1967) found that boys who are "stream disoriented" (i. e., disoriented in the sense that they are behavior problems in school) scored higher than boys who are stream oriented. Finally, Taft (1968) found that high school students who scored high on the I-I Inventory scored higher than their low Irrational Idea counterparts on the Neuroticism Scale of the Maudsley Personality Inventory, the Revised Taylor Manifest Anxiety Scale, and the Willoughby Personality Schedule.

An association has been established, therefore, between high scores on the I-I Inventory and both anxiety and underachievement. This measure was used in order to test the effect of the treatments upon behavior which is associated with anxiety but moves apart from the explicit concept of anxiety. It is to be noted that it is not a direct measure of anxiety.

Reliability. Zingle (1965) reports a test-retest reliability coefficient of .80. Ninety-one subjects from grades X, XI, and XII were tested twice, with an interval of five weeks.

Validity. Three judges familiar with the writings of Ellis independently labeled the items of the I-I Inventory according to what irrational belief they felt the items were measuring. The inter-correlations among the three judges and the test author ranged from .75 to .85.



## CHAPTER VI

### Results and Conclusions

This chapter will present the evidence for the confirmation or rejection of the hypotheses.

The analysis of data was required to determine two things: first, whether or not either treatment achieved a reduction in the anxiety of the underachievers, as the two treatment groups were compared to the control group; and second, whether or not either treatment achieved an improvement in the academic course marks of the underachievers, as the treatment groups were compared to the control groups. A one-way classification, analysis of variance was chosen as the most appropriate procedure.

Parallel groups in the two schools were combined for purposes of analysis. Thus, for example, the client centered group of eight students in one school was combined with the group of eight in the other, to produce the Client Centered Treatment Group of 16. The project was designed originally for the comparison of three groups of 16 subjects each.

Each time the analysis of variance was used, a chi square test ascertained the pre-treatment homogeneity of the variances of the groups. The other usual assumptions of the analysis of variance were met.





### The Removal of Two Subjects

Unfortunately, two subjects, one from each school, were removed from the Behavioral Treatment Group. One of these withdrew from treatment after the first interview, owing to a misunderstanding of the nature of the treatment. This misunderstanding may be attributed to the communication to the subject of the strain and embarrassment which the counselor declared she had felt throughout the first interview in attempting to carry out a counseling technique distinctly different from her usual approach. Only one of this counselor's two behavioral subjects withdrew. The counselor felt comfortable in interviewing the two client centered subjects in her accustomed manner.

Another subject was, by decision of the experimenter, neither given the post-treatment anxiety measures nor included in the analysis of results, because of the death of his mother two weeks before the final measures were to be taken.

The size of the Behavioral Treatment Group was, in the manner described, reduced from 16 to 14.

### Hypothesis 1

Anxiety will be reduced for Grade X and XI boys having above average academic ability, relatively high general anxiety, and who voluntarily accept treatment, through a program of individual counseling given by regular school counselors using the behavioristic methods of Joseph Wolpe combined with operant conditioning.

An analysis of variance was performed for each of the two



measures of anxiety on the differences between pre-treatment and post-treatment raw scores.

Table I

Means and Standard Deviations of the Differences Between Pre- and Post-Treatment Scores on the IPAT Anxiety Scale Questionnaire Derived for the Two Experimental Groups and the Control Group

Groups	N	Mean	Standard Deviation
1. (Behavioral)	14	-13.50	9.05
2. (Client Centered)	16	- 4.31	10.87
3. (Control)	16	- 1.44	8.03
Total	46	- 6.11	10.40

Table II

Summary of Analysis of Variance of the Differences Between Pre- and Post-Treatment Scores on the IPAT Anxiety Scale Questionnaire Derived for the Two Experimental Groups and the Control Group

Sources of Variation	Sums of Squares	Mean Squares	Degrees of Freedom	Obtained F Value	Significance
Between	0.12	582.79	2.	6.58	0.003
Within	0.38	88.53	43.		



The differences between groups which are shown in Table I are demonstrated, in Table II, to be significant beyond the .05 level. Table III indicates the results obtained when the differences between the means of the groups were compared, two by two, by means of the Scheffe method.

Table III

Probability Matrix for Scheffe Multiple Comparison of Means After Significant F test of Differences Between Pre- and Post-Treatment Scores on the IPAT Anxiety Scale Questionnaire Derived for the Two Experimental Groups and the Control Group

Groups	2	3
1	0.037	0.005
2		0.691

From Table III it is apparent, when Group 1 is compared to Group 3, the control group, that on the Cattell Anxiety Scale Questionnaire a reduction of anxiety was achieved in Treatment Group 1. Hypothesis 1 is therefore supported.

The differences between groups which are shown in Table IV are demonstrated, in Table V, to be significant beyond the .05 level. Table VI indicates the results obtained when the differences between the means of the groups were compared, two by two, by means of the Scheffe method.



Table IV

Means and Standard Deviations of the Difference  
Between Pre- and Post-Treatment Scores on The  
Willoughby Personality Schedule Derived for the  
Two Experimental Groups and the Control Group

Group	N	Mean	Standard Deviation
1	14	-16.07	18.46
2	16	- 0.31	11.72
3	16	- 0.25	12.97
Total	46	- 5.09	15.77

Table V

Summary of Analysis of Variance of the Differences  
Between Pre- and Post-Treatment Scores on The  
Willoughby Personality Schedule Derived for the  
Two Experimental Groups and the Control Group

Sources of Variation	Sums of Squares	Mean Squares	Degrees of Freedom	Obtained F Value	Significance
Between	0.24	1214.14	2.	5.79	0.0059
Within	0.90	209.61	43.		

From Table VI it is apparent, when Group 1 is compared to Group 3, the control group, that on The Willoughby Personality Schedule a significant reduction of anxiety was achieved in Treatment Group 1. In addition to being supported by results on Cattell Anxiety Scale





Questionnaire, Hypothesis 1 is supported by results on The Willoughby Personality Schedule.

Table VI

Probability Matrix for Scheffe Multiple Comparison of Means After Significant F Test of Differences Between Pre-and Post-Treatment Scores on The Willoughby Personality Schedule Derived for the Two Experimental Groups and the Control Group

Groups	2	3
1	0.018	0.017
2		0.999

Tables VII and VIII report the results of the analysis of pre- and post-treatment scores for the three groups on the I-I Inventory.

Table VII

Means and Standard Deviations of the Differences Between Pre- and Post-Treatment Scores on the I-I Inventory Derived for the Two Experimental Groups and the Control Group

Group	N	Mean	Standard Deviation
1	14	-33.93	61.83
2	16	-23.94	60.34
3	16	- 7.06	34.87
Total	46	-21.11	52.78



Table VIII

Summary of Analysis of Variance of the Differences  
Between Pre- and Post-Treatment Scores on the I-I  
Inventory Derived for the Two Experimental Groups

Sources of Variation	Sums of Squares	Mean Squares	Degrees of Freedom	Obtained F Value	Significance
Between	0.56	2792.83	2.	0.98	0.384
Within	0.12	2849.88	43.		

It can be seen from Tables VII and VIII that there are no significant differences between the means of the three groups on the I-I Inventory pre- and post-treatment discrepancy scores.

Hypothesis 1, that anxiety will be reduced for Grade X and XI boys having above average academic ability, relatively high general anxiety, and who voluntarily accept treatment, through a program of individual counseling given by regular school counselors using the behavioristic methods of Joseph Wolpe combined with operant conditioning, is taken to be confirmed by the results of the two anxiety measures, and not supported by the results of the anxiety- associated measure, the I-I Inventory.

#### Hypothesis 2

The mean of academic course marks will be raised for Grade X and XI boys having above average academic ability, relatively high general anxiety, and who voluntarily accept treatment, through a



program of individual counseling given by regular school counselors using the behavioristic methods of Joseph Wolpe combined with operant conditioning.

Normalized T scores, computed separately for each of Grades X and XI in each school, represented for each matriculation student the mean of his marks on four mid-term tests. Normalized T scores calculated in this manner for the subjects of the three groups of the experiment were subtracted from normalized T scores computed in the same way but based on each student's marks in the four subjects on the Easter tests. An analysis of variance was performed on the resulting differences, to see if there were significant differences among the two treatment groups and the control group.

Table IX

Means and Standard Deviations of Differences  
Between Normalized T Scores on Pre- and Post-  
Treatment Individual Means of Academic Course  
Marks, Derived for the Two Experimental Groups  
and the Control Group

Group	N	Mean	Standard Deviation
1	14	3.44	7.90
2	16	0.87	8.24
3	16	3.52	7.35
Total	46	2.58	7.67

It can be seen from Tables IX and X that differences between groups are not significant. Hypothesis 2, contending that the academic





course marks of the underachieving subjects will be improved as a result of the behavioristic counseling, is therefore rejected.

Table X

Summary of Analysis of Variance of Differences Between Normalized T Scores on Pre- and Post-Treatment Individual Means of Academic Course Marks, Derived for the Two Experimental Groups and the Control Group

Source of Variation	Sums of Squares	Mean Squares	Degrees of Freedom	Obtained F Value	Significance
Between	0.71	35.61	2.	0.58	0.564
Within	0.26	61.36	43.		

### Hypothesis 3

The Behavioral Treatment Group will be superior to the Client Centered Treatment Group in effectiveness in reducing the anxiety of the underachievers.

From Table I and Table III it is apparent that the mean reduction of anxiety, as measured by the IPAT Anxiety Scale Questionnaire, was significantly greater in the Behavioral Treatment Group (Group 1) than in the Client Centered Treatment Group (Group 2).

From Tables VII and VIII it can be seen that there was no significant difference among the groups in terms of scores on the I-I Inventory.

It is concluded that the results on the IPAT Anxiety Scale Questionnaire and The Willoughby Personality Schedule support



Hypothesis 3. The results from the I-I Inventory do not support Hypothesis 3.

#### Hypothesis 4

The Behavioral Treatment Group will be superior to the Client Centered Treatment Group in effectiveness in raising the mean of academic course marks.

It will be recalled from Table X that the differences in the variance among the three groups on normalized T scores of differences between pre- and post-treatment individual means of academic course marks are not significant. It follows that concerning effectiveness in bringing about improvement in marks the Behavioral Treatment Group is not superior to the Client Centered Group, and Hypothesis 4 is rejected.

#### Conclusions

The following conclusions appear to the experimenter to be based upon the evidence of the experiment.

1. The results from three measures used indicate partial support of Hypothesis 1, to the effect that anxiety in the underachieving subjects would be reduced by the behavioral treatment, involving a combination of reciprocal inhibition and operant conditioning.

2. The lack of change in school marks of subjects in the treatment groups as compared to the marks of those in the control group necessitates rejection of Hypothesis 2, which predicted significant change in the Behavioral Treatment Group.



3. Anxiety reduction to a significant degree was accomplished by the Behavioral Treatment Group and not by the Client Centered Treatment Group on two out of three measures. On the third measure there were no significant differences between groups. Hypothesis 3, predicting that the behavioral treatment would achieve a greater measure of anxiety reduction than the client centered treatment, was therefore partially supported.

4. The raising of school marks to a significant extent was not accomplished by either of the treatment groups. Therefore no superiority of one treatment over the other in this respect was demonstrated, and Hypothesis 4 is rejected.





## Chapter VII

### Discussion

In this final chapter, some information about the reinforcement which is not directly associated with the hypotheses is presented, some implications of the results of the experiment are discussed, the importance of the results for practical counseling in the schools is considered, and recommendations for further research are made.

#### Results of the Reinforcement

The experiment was not designed so as to yield separate measurements of the results of the two treatment components, systematic desensitization and reinforcement. The general efficacy of both methods is discussed in Chapter III. Because of the novel character of time in therapy as a reinforcement and the lack so far of any extensive body of supporting research, the experimenter considered it important to obtain at least a subjective assessment from the counselors concerning the operation of this reinforcement.

Accordingly, the eight counselors were each asked to express their opinion, separately for each of the subjects they treated in the behavioral group, in response to the following questions:

1. Did the student find the reinforcement actually rewarding?
2. If yes to question 1, did this reward change positively the behaviors of studying and/or attending school regularly to any appreciable degree?
3. Was the counseling time often cut down from the original time because of the contract?





Answers for No. 1: Yes - 12; No - 2.

Answers for No. 2: Yes - 11; No - 1.

Answers for No. 3: 9 students had no interviews shortened;

2 students each had one interview shortened;

1 student had 3 interviews shortened;

2 students were not described by their counselor in terms of question 3 on the questionnaire.

This result may be interpreted as lending support to the further use and testing of time in therapy as a reinforcement, in high school counseling.

### Discussion of the Results

The partial support for Hypotheses 1 and 3, outlined in the previous chapter, is, in the opinion of the experimenter, substantial support. It is noteworthy that the results from both instruments designed specifically for the measurement of anxiety support the hypotheses.

With regard to the non-support of the hypotheses by I-I Inventory results, it will be recalled that in Chapter V the point was made that although the I-I Inventory has been shown to be associated with anxiety measures, it was developed upon the basis of a different theoretical formulation from the concept of anxiety. The use of the I-I Inventory in the experiment was justified and valuable, because it showed the quite specific nature of the anxiety reduction occurring in



the immediate post-treatment period, as indicated also by the anxiety measures. Its importance as evidence for the rejection of Hypotheses 1 and 3, which are concerned with anxiety reduction as such rather than with the reduction of irrational ideas, should not be overestimated.

Of further relevance to the results on the I-I Inventory is the speculation that change might be evident on the Inventory if a period of time were to elapse between the end of treatment and the administration of the Inventory.

The I-I Inventory (Zingle, 1965) is constructed of items which are intended to embody eleven irrational ideas which Ellis (1962), the source of the Inventory's rationale, considers to characterize the mental processes of the disturbed person. Ellis's own therapy is designed to make the client's thinking more rational, a change which should be reflected in a reduction in the number of irrational ideas which characterize his thinking.

Counseling in neither treatment group of the present experiment was carried on in Ellis's terms. If Ellis's theory is sound, however, a reduction of disturbance in an individual, no matter how it is brought about, should be paralleled by a reduction in the number of his irrational ideas. The present contention is, however, that this reduction, in terms of all possible irrational ideas, may not be simultaneous with the accomplishment of altered unadaptive emotional responses when the alteration of these responses was not mediated by procedures which drew attention to particular rational formulations which are likely to accompany emotional responses.

A reduction of unadaptive anxiety experienced by a subject,





brought about through the presentation and desensitization of numerous scenes depicting aspects of the subject's experience, may not immediately result, in the subject's mind, in some such generalization that it no longer seems easier to avoid than to face life's difficulties and responsibilities. Yet he may well come to an implicit formulation of this generalization, which is taken from Ellis (1962), when he has had time to assess and to generalize the implications of his new response patterns.

Time for such a process to be worked through was not provided for the subjects of the present experiment. If it could have been provided, a significant reduction in the number of irrational ideas might have been evident in the subjects of one or both of the treatment groups. Indications from the experiment of better anxiety reduction in the behavioral group than in the client centered group, however, would lead to the expectation that the greater reduction of irrational ideas, after a time lapse, would occur in the behavioral group. This discussion of the result on the I-I Inventory is, of course, pure speculation. It is a matter which could be experimentally investigated.

Follow-up measurements might have provided an answer to the speculation about the I-I Inventory result. A follow-up was unfortunately not possible, for practical reasons, and because of the design of the experiment. A necessary condition of the control group was that its members could, upon request, obtain the counseling assistance after Easter for which they had volunteered after Christmas. As many of them did request this assistance, it would not have been





possible to use the control group for comparison purposes in a follow-up.

Having considered the meaning of the evidence relevant to Hypotheses 1 and 3 concerning anxiety reduction, it is now appropriate to discuss the evidence pertaining to Hypotheses 2 and 4, which refer to the improvement of academic course marks.

The general approach of this experiment to the modification of underachievement will be recalled from Chapters II and III. The position was there elaborated that excessive anxiety is a critical factor in the genesis and maintenance of underachieving behavior, and that counseling applying the combined treatments of reciprocal inhibition and reinforcement would make two changes in subjects which would result in improved academic course marks. First, the unadaptive anxiety level would be reduced, largely by the desensitization, and second, improved study and attendance behaviors would be instilled, this being facilitated both by the removal of the anxiety barrier to learning, and by the reinforcement of new academic endeavors.

On the one hand, however, the results show, in the opinion of the experimenter, that the reduction of high anxiety was accomplished by the behavioral treatment; and on the other hand, that academic course marks remained unimproved.

It must be concluded, therefore, that either excessive anxiety is less relevant to underachievement than supposed, or that the experimental procedure was somehow ineffective. In the opinion of the experimenter, the weight of evidence presented in Chapter II is strongly against the acceptance of the first alternative. He therefore



accepts the second alternative, and finds, in fact, a plausible line of reasoning as to why his procedure for instilling new academic behavior was ineffective. This reasoning also suggests changes in the attempt to modify underachievement which would be more likely to achieve success than the present attempt.

It might be reasonable to expect that improvement in the school marks of students who have underachieved for a period of years because of certain emotional response patterns will not follow immediately upon the alteration of emotional responses. New skills and knowledge will have to be acquired before discernible changes in marks will occur.

The expectation of the present experiment was that desensitization would begin to occur quickly enough and that the reinforcement would be effective soon enough, that the new learnings necessary for the improvement of marks would be well advanced by the time the post-treatment measures were taken. The above-average academic potential of the subjects enhanced this expectation. It is clear from the results of the experiment that, even with the use of desensitization and reinforcement, new learnings did not proceed at this expected rate.

Two of the recent studies which succeeded in improving the grade-point average of underachievers may appear inconsistent with this conjecture about the rate of acquisition of effective academic behaviors when desensitization and/or reinforcement are used, because their post-treatment improvement in GPA was recorded immediately following treatment (Katahn, Strenger, and Cherry, 1966; Paul and Shannon, 1966).





Any apparent inconsistency disappears, however, when it is noted that both these experiments were performed with college undergraduates as subjects. It is possible that underachievers who have sufficient grounding in study skills and academic fundamentals to obtain entrance to college would upon gaining release from emotional impediments proceed in their acquisition of knowledge at a much faster rate than would the subjects of the present experiment, none of whom could gain college admission with their current level of achievement.

It may further be noted that the subjects of Katahn, et al. (1966) were selected as being test-anxious, as distinct from the generally anxious subjects of the present experiment. The test-anxious college student may have quite adequate academic skill and knowledge, which manifest themselves as good marks immediately upon the removal of an emotional examination-writing impediment. The subjects of the present experiment typically were characterized by a much broader range of anxiety than the subjects of Katahn et al. (1966) and a lower level of academic proficiency.

The opinion thus retains plausibility that a ten-week treatment period is too short a time for desensitization and reinforcement to bring about academic improvement in generally anxious high school underachievers.

It follows that, given the critical role of anxiety in underachievement, and having achieved a reduction of this anxiety, a reasonable expectation of success in the raising of school course marks could be entertained by providing a further period of treatment time, during which the anxiety reduction would be maintained, reinforcement continued



and remedial work to assist in the correction of academic deficiencies supplied.

This point of view is reinforced by any validity which there may be in the earlier speculation regarding time needed after anxiety reduction before results will show on the I-I Inventory. If in time the effects of anxiety reduction spread out to alter important ideas about life, such conceptual levels should be close to those involved in academic achievement.

### Practical Application of the Results

The experimenter believes, from his own experience in school counseling, that excessive anxiety as such is a great problem for numerous pupils, and that it is an important component of many seemingly more complex pupil problems. The result of the present experiment showing a probably successful reduction of anxiety through the use of behavioral methods, could well have an immediate and important practical application in schools. This conclusion is supported by the fact that the counseling was done by regular school staff counselors who were initially insight-oriented and who received a relatively small amount of assistance in applying the new technique.

### Recommendations for Further Research

1. It would be valuable to test the conjecture arising from the present experiment that given the maintenance of anxiety at a relatively low level and continuing reinforcement, and adding academic remediation over a period of time, improvement in academic course





marks would occur for subjects of a behavioral treatment group.

2. In any experiment such as that described in number 1, it would be well to adopt a group approach to treatment (Emery and Krumboltz, 1967, Laxer, et al., 1968) in the interest of saving counselor time.

3. Further, in such an experiment, a more adequate preparation of the counselors than was possible in the present experiment would be advisable. With more preparation of the counselors in behavioral counseling, the withdrawal of subjects for the reasons given by the subject who withdrew from the present experiment would be avoided. Furthermore, the effectiveness of the behavioral counseling would undoubtedly be increased if counselors were thoroughly trained and had some experience with the method before the experiment began.

4. Finally with regard to a further experiment such as that described in number 1, it would be advisable to work with a larger number of subjects than was possible in the present endeavor. Not only would a larger number of subjects help to protect the experiment against a critical attrition of numbers due to such factors as illness, accident, and removal, but a better prospect of obtaining significant results would obtain.

5. It would be valuable to measure responses on the I-I Inventory after various types of counseling and at the end of various time-lapses following treatment.







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1. The first part of the paper is devoted to a general discussion of the problem.

2. In the second part, we consider the case of a single variable.

3. The third part is devoted to the case of several variables.

4. In the fourth part, we consider the case of a function of several variables.

5. The fifth part is devoted to the case of a function of several variables.

6. In the sixth part, we consider the case of a function of several variables.

7. The seventh part is devoted to the case of a function of several variables.

8. In the eighth part, we consider the case of a function of several variables.

9. The ninth part is devoted to the case of a function of several variables.

10. In the tenth part, we consider the case of a function of several variables.

11. The eleventh part is devoted to the case of a function of several variables.

12. In the twelfth part, we consider the case of a function of several variables.

13. The thirteenth part is devoted to the case of a function of several variables.

14. In the fourteenth part, we consider the case of a function of several variables.

15. The fifteenth part is devoted to the case of a function of several variables.

16. In the sixteenth part, we consider the case of a function of several variables.

17. The seventeenth part is devoted to the case of a function of several variables.

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23. The twenty-third part is devoted to the case of a function of several variables.

24. In the twenty-fourth part, we consider the case of a function of several variables.

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1. The first part of the paper is devoted to the study of the

properties of the function  $f(x)$  defined by the equation

$$f(x) = \int_0^x f(t) dt$$

It is shown that the function  $f(x)$  is continuous and differentiable

at every point  $x$  and that the derivative is given by the equation

$$f'(x) = f(x)$$

It is also shown that the function  $f(x)$  is bounded on the interval

$[0, 1]$  and that the maximum value of the function is attained at

$$x = 1$$

It is also shown that the function  $f(x)$  is concave down on the interval

$[0, 1]$  and that the minimum value of the function is attained at

$$x = 0$$

It is also shown that the function  $f(x)$  is increasing on the interval

$[0, 1]$  and that the maximum value of the function is attained at

$x = 1$  and that the minimum value of the function is attained at

$x = 0$  and that the function is concave down on the interval

$[0, 1]$  and that the maximum value of the function is attained at

$x = 1$  and that the minimum value of the function is attained at

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1. The first part of the paper is devoted to the study of the properties of the function  $f(x)$ .

2. In the second part, we consider the case when the function  $f(x)$  is continuous.

3. The third part of the paper is devoted to the study of the properties of the function  $f(x)$ .

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26. In the twenty-sixth part, we consider the case when the function  $f(x)$  is continuous.

27. The twenty-seventh part of the paper is devoted to the study of the properties of the function  $f(x)$ .

28. In the twenty-eighth part, we consider the case when the function  $f(x)$  is continuous.

29. The twenty-ninth part of the paper is devoted to the study of the properties of the function  $f(x)$ .

30. In the thirtieth part, we consider the case when the function  $f(x)$  is continuous.

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## Appendix A



## Appendix A

### Client Centered Treatment Manual

In the fairly extensive experience of the author with counseling in the Edmonton Public School system, there have appeared to be, speaking broadly, two types of counselor, the untrained and the trained.

At their best, the untrained counselors have been kindly advice-givers whose efforts have been appreciated by many students seeking guidance and information about school and post-school courses, and about vocations. They have tended to feel out of their depth in dealing with students having personal and emotional problems, and typically have referred these on to administrators or school psychologists. As one consequence, the number of students presenting such problems in schools having only untrained counselors has usually been a small fraction of those having problems serious enough that they would ask for help if suitable help were available.

At their worst, untrained counselors have functioned as pseudo-administrators, doing chores which the administrators dislike or have been too busy to get around to. They have been judgmental, institution-oriented rather than individual-student-oriented, and often poorly informed regarding post-school training, vocations, and even school courses.

With the establishing and expansion by the Faculty of Education, University of Alberta, of a full scale counselor education program, a new kind of counselor has fairly rapidly begun to replace the old. Significantly, too, there has been a gradual growth in the





acceptance and use of the new, trained counselor on the part of students, teachers, and administrators. As a consequence, some schools already have counseling or student personnel departments which are heavily used by students on self-referral, and which deal not only with information-giving and testing but also with personal and emotional problems in a fully professional manner.

The orientation of most of the counseling done by the trained personnel reflects the dominant movement in non-psychiatric counseling, client centered therapy. There are, of course, many variants of this approach, due to the personal style of counselors and to their university instructors and their reading, but the predominant overall attitude and methodology have remained client centered.

It is this usual approach to counseling, along with its variants, as carried on by most trained counselors in this school system, which should be adhered to in the treatment group under discussion here.

In a very few cases, counselors have begun to experiment with distinctly different approaches, such as those of Ellis, Glasser, Williamson or Maltz. It is imperative, however, that in this treatment group a basically uniform approach be taken. If divergent treatment methods are used in this group, the comparison of treatment methods, which is the object of the experiment, will have little meaning. Counselors who may have been experimenting with other methods, and perhaps adopted them, are, therefore, requested to revert, in dealing with this group, to the client centered counseling in which, it is fair to say, all counselors trained in the Department of Educational





Psychology, University of Alberta, have become adept.

This request is, of course, easier to make than to respond to. In a few cases it will further complicate the role switch on the part of the counselor called for as he moves between the two treatment groups of this experiment. It is now, however, an unrealistic request, in view, first, of the initial training taken by the counselors involved in this study, and second considering the fact that therapists of almost all persuasions endorse to a greater or lesser extent the essential elements of client centered therapy.

Because of the circumstances of training and of practice amongst the counselors of this school system, already discussed, there will be no need to enlarge in detail upon the client centered approach to psychotherapy. It is probably necessary, however, to make some statement of the client centered position, for two reasons. First, it will serve as a concrete statement which can be agreed upon by all the counselors and by the experimenter as defining the expected approach in the client centered group; and second, it will make explicit the nature of this group for those who will judge the merits of this research and its findings.

Argument about what client centered there is, as distinct from argument about its therapeutic value, can be minimized by describing it in the words of its founder and developer, Carl R. Rogers. He has summed up his thinking in 10 questions, as follows (Rogers, 1958):

. . . So rather than try to tell you how you should use the findings I have presented I should like to tell you the kind of question



which these studies and my own clinical experience raise for me, and some of the tentative and changing hypotheses which guide my behavior as I enter into what I hope may be helping relationships, whether with students, staff, family, or clients. Let me list a number of these questions and considerations.

1. Can I be in some way which will be perceived by the other person as trustworthy, as dependable or consistent in some deep sense? . . . I have come to recognize that being trustworthy does not demand that I be rigidly consistent but that I be dependably real. The term congruent is one I have used to describe the way I would like to be. By this I mean that whatever feeling or attitude I am experiencing would be matched by my awareness of that attitude.  
 . . .

2. A very closely related question is this: Can I be expressive enough as a person that what I am will be communicated unambiguously? . . . If in a given relationship I am reasonably congruent, if no feelings relevant to the relationship are hidden either to me or the other person, then I can be almost sure that the relationship will be a helpful one.

3. A third question is: Can I let myself experience positive attitudes toward this other person--attitudes of warmth, caring, liking, interest, respect? . . .

4. Another question the importance of which I have learned in my own experience is: Can I be strong enough as a person to be separate from the other? . . . Am I strong enough in my own separateness that I will not be downcast by his depression, frightened by his fear, nor engulfed by his dependency? . . .

5. The next question is closely related. Am I secure enough within myself to permit him his separateness? . . . Or do I feel that he should follow my advice, or remain somewhat dependent on me, or mold himself after me?





6. Another question I ask myself is: Can I let myself enter fully into the world of his feelings and personal meanings and see these as he does? Can I step into his private world so completely that I lose all desire to evaluate or judge it? . . .

7. Still another issue is whether I can be acceptant of each facet of this other person which he presents to me. Can I receive him as he is? Can I communicate this attitude? Or can I only receive him conditionally, acceptant of some aspects of his feelings and silently or openly disapproving of other aspects? . . .

8. A very practical issue is raised by the question: Can I act with sufficient sensitivity in the relationship that my behavior will not be perceived as a threat? . . . If I can free him as completely as possible from external threat, then he can begin to experience and to deal with the internal feelings and conflicts which he finds threatening within himself.

9. A specific aspect of the preceding question but an important one is: Can I free him from the threat of external evaluation? . . . So I have come to feel that the more I can keep a relationship free of judgment and evaluation, the more this will permit the other person to reach the point where he recognizes that the locus of evaluation, the center of responsibility, lies within himself. . . .

10. One last question: Can I meet this other individual as a person who is in process of becoming, or will I be bound by his past and by my past... . (pp. 11 - 14).

The treatment of underachievement at the high school level may involve, as does most school counseling, a certain amount of discussion and information-giving pertaining to the student's educational and vocational future. It is quite possible to carry on these activities in complete accord with Rogerian principles.





Counseling in this, as in the behavioral group, will be limited to 10 weekly interviews, each one school period in duration. This limitation applies, of course, only to the time between the first and the final measurement of the experiment. The predetermined duration of the counseling should be understood by each client from the first interview.

Although it could be argued that such a restriction is incompatible with a client centered approach to counseling, it can also be pointed out that external circumstances always impose limits upon all counseling, including client centered counseling. In one case a client may know that his parents are moving from the city in two months; in this case the limit is a requirement of research design. There is no reason why this limit should inhibit the establishment of a good client centered relationship. Of course, if a counselor, overly conscious of the passage of time, should attempt to rush things, this type of relationship could be damaged. Any tendency for the counselor to apply forward pressure in this group should therefore be avoided. An indication that 10 interviews will usually be sufficient, although admittedly only a very rough indication indeed, is that according to statistics produced by Student Personnel Services of Victoria Composite High School for the school year 1967 - 1968, only 20% of the 1,971 students interviewed were seen for more than 10 sessions. A more definite conclusion may emerge from this study as to whether or not 10 interviews is generally optimal when the problem is underachievement.



## Appendix B



## Appendix B

### Reciprocal Inhibition-operant Reinforcement Treatment Manual

Psychological difficulties are not illnesses. They are not infections like pneumonia or a cold, nor mechanical failures like a broken limb or slipped disc; they are not degenerative ailments like arteriosclerosis or bursitis. Functional, psychological disturbances are a failure in learning like not being able to speak French, or a result of learning, like speaking French (Greenberg, 1966, p. 4).

The problem to be solved in this treatment group is that of underachievement in superior, relatively high anxious, Grade X and Grade XI matriculation students. An assumption is that psychological disturbances of various kinds are a major factor in the underachievement, and that their elimination will result in improved academic achievement.

The treatment given this group will be a behavioristic treatment based upon learning theory. As the problem is the maladaptive behavior of underachievement, the criterion of success will be changed behavior in the direction of improved academic achievement. There may, and hopefully will, be other benefits of treatment, but the counselor should keep this goal always in mind as the primary one in this experiment.

Reciprocal inhibition and operant reinforcement are helped by the client's understanding both of his problem and of the psychological treatment. These are not, as is sometimes alleged, anti-insight approaches. They are insight plus approaches. Because these are not purely mechanical processes directed toward machines, it is as important





as in any other therapeutic approach to human beings that the counselor establish and maintain a warm, sincere, accepting, and concerned relationship with his client.

Although behavioristic psychotherapy attempts to develop special treatment methods to deal with particular problems, the reciprocal inhibition of Joseph Wolpe is well suited to the range of problems likely to be encountered in high anxious underachievers. It is a myth that this method is appropriate for the treatment only of the relatively rare unitary phobias. Further, the operant reinforcements to be used are specifically designed to deal with the problem in hand.

A superficial viewing of Wolpean procedures has left some counselors with the opinion that this is an essentially negative approach, as though the client were divested of his personality in the process. In fact, however, the attack of reciprocal inhibition is only upon clearly demonstrated self-destroying patterns of behavior. If this is negative, then so is the lancing of an abscess or the pulling of a sliver in physical therapy.

In accurate perspective, however, the draining of pus or the pulling of a sliver leave the physical organism in an improved state for the carrying on of normal bodily tasks. Similarly the Wolpean procedures are correctly viewed not as an attack upon the personal integrity of the client, but as a potent method of restoring him to his own normality. There is a fundamental assumption made about, or faith implied in, the ability of the normal non-neurotic person to cope with life.



Desensitization divests the client of nothing which he himself values. It does not leave him a freakish being with no problems. Wolpean procedures do not reduce the client; they remove blocks to his normal rational and emotional functioning so that he can build and develop. Nothing can be more positive in therapy than the re-learning by the client of how to live and react and develop without the frustration of neurotic anxieties and other emotions which he is powerless to overcome.

The need for some educational and/or vocational counseling may sometimes become apparent, as when a client needs special remedial help in mathematics, or is bewildered as to his educational-vocational goals. Within the time limits imposed, the counselor should make every effort to meet such needs. Care should be taken, however, to see that there is sufficient time for the procedures to be outlined later to be thoroughly attended to.

The successful employment of the methods of this treatment group will be a test of the flexibility and skill of the counselor trained in the client-centered approach. Although, as noted above, elements also essential to the client-centered approach must be retained, the counselor using the methods of Wolpe and of reinforcement must undergo a distinct change in role. He must now assume the control and direction of the interview, although not in an autocratic or inflexible way. His rôle must now incorporate some of the instructional and activist aspects of the role of the classroom teacher. He will find that, much more than in the client-centered interview, the planning of procedures before the interview is essential. Yet he must be prepared



to adapt his plan to the emerging demands of each unique interview.

There can be little doubt that effective planning and preparation as well as skill in the interview will be necessities if the required procedures are to be carried out within the time limits of the school period interview, while still keeping a relaxed, un-pressured client-counselor relationship.

It may be of help to the counselor if he can schedule the clients to be dealt with according to the two different treatments in blocks, rather than interspersing them. This should require less frequent role switching than otherwise.

If the operant reinforcement is to work, it will be important for the counselor to follow the contract with the student strictly, making allowances only for definite illness or other factors clearly beyond the control of the client.

If a client misses an interview, it should, if possible, be re-scheduled for a later time. No more than ten interviews, on the other hand, should be given to any client of either treatment group during the experimental period.

Although overstuffed armchairs are probably not a possibility at present in a school counselor's office, a minimum safety requirement for a fully relaxed student is a chair with arms.

Some interviews will be taped, for research design purposes. When this is done, the client must be informed, and his permission obtained.

If, at the conclusion of treatment, the client wants further treatment and the counselor wishes to supply it, further interviews







should be postponed until after the post-treatment measures, including the Easter report marks, are all completed. Every effort should be made, however, to provide the full course of desensitization, operant reinforcement, and if used, the assertive training during the allotted ten interviews.



Elements of the Reciprocal Inhibition-operant  
Reinforcement Interview

1. Discussion of problem and its background.
  - information given to client regarding school data:  
his IQ range; his mark average on core mid-term  
report subjects.
  - discussion of questionnaire items.
  - discussion of material volunteered by client in interview.
2. Explanation of solution.
  - reciprocal inhibition; assertive training in some cases;  
the acquisition of new learning behaviors through  
operant reinforcement; educational and vocational  
counseling when and if necessary.
3. Making the nature of the problem explicit and detailed.
  - construction of hierarchies; general discussion.
4. Relaxation training.
5. Desensitization.
6. Reinforcement of new study and attendance behaviors.



First Interview

1. Discussion of problem and its background.
2. Explanation of solution (reciprocal inhibition, operant reinforcement).
3. Relaxation Training, first lesson.
4. Assignment for next week: relaxation practice, homework, and attendance contract.

Second Interview

1. Check on homework and attendance contract, set length of interview.
2. Check on relaxation practice and progress; give second lesson.
3. Work on hierarchy construction. Permit some discussion of problems.
4. Assignments for next week: relaxation practice, homework, and attendance contract, bring list of any additional disturbing situations.

Third Interview

1. Check on homework and attendance contract, set length of interview; check into procedure and quality of homework, and nature of attention in school classes.
2. Check on complete relaxation.
3. Work on hierarchy construction, completing at least one (the most bothersome) if possible. Consider new list from student.





Introduce assertive training if you think it would helpful.

In some cases, you may be ready to start desensitization this session.

Discussion of Problems.

4. Assignment for next week: relaxation practice if needed still, homework and attendance contract.

#### Fourth Interview

1. Check on homework and attendance contract, set length of interview, discuss homework and attention if necessary.
2. Continue work on construction of other hierarchies as indicated by list of disturbances so far not organized. Consider progress of assertive training, if being used.
3. Be sure to leave about thirty minutes for this first desensitization session, using the completed hierarchy.
4. Assignment for next week: homework and attendance contract.

#### Interviews Five Through Ten

1. Continue to work in the areas of (1) and (4), making full time in the interviews a reward for continuing progress in homework, attendance, and attention to optimal levels. Begin to inquire into improvement in assignment marks, teacher comments, general understanding of work, etc.
2. Gradually complete the organization of all hierarchies, and be working through them by means of desensitization.
3. Keep advancing the assertive training, if it is being used,



until optimal levels of self-expression are achieved.

4. Try to work in any required educational or vocational counseling, as time permits.
5. If it should become very clear that all that can usefully be done is completed in fewer than ten interviews, agree with the student to terminate and record the number of interviews held. Tell him you will be watching his Easter marks with great expectation.
6. If it becomes clear that procedures cannot be completed in the ten interviews, explain to the student that interviews must terminate until after Easter, when you will call him again, if he wishes it, and complete all hierarchies. Tell him also that you will be watching his Easter marks with high expectations.



## First Interview in Detail

(It is not suggested that the wording presented here be followed slavishly.)

1. Following your usual ease-inducing introductory dialogue, begin a discussion of the student's problem and its background. Give him his IQ range and his mark average. Make sure that you both agree on what the behavior to be changed through the interview period is -- underachievement. Confirm his voluntary undertaking of the course of ten interviews.

2. Then say that the tests he wrote show a relatively high level of anxiety, and that unnecessary anxiety or emotional disturbance can interfere with achievement in school, with friendships, cause difficulty all through life, and therefore interfere with happiness.

Tell him that we are going to use a special procedure to get rid of the kind of fears and worries that really have no foundation. It is a procedure that has been highly successful with many people, even though it is fairly new.

Just as we learn to walk, you may tell him, we learn our emotional reactions. Sometimes we learn emotional patterns which are not helpful to us, like, for example, the person who always loses his temper. He wasn't born that way, quick temper is a response he learned.

Because excessive anxiety also is learned, it can be unlearned and the procedure we will use will accomplish this. When you get rid of this burden of anxiety you will be removing a major block you now have to making the best use of your good ability. You will see how it works, but very briefly, you will learn how to substitute a helpful emotion for





for the hurtful one of unrealistic anxiety.

Of course some anxiety or fear is essential, as when we fear to walk in front of a car. But some people have a vague feeling of anxiety all the time, and others are anxious about things that can't harm them, for example, they are afraid to walk into a crowded room, even though they know that everyone there is friendly to them. And because they are anxious, they are apt to appear shy and may do or say foolish things, which just makes them feel more terrible, and act more anxiously on the next similar occasion. It is this unnecessary, crippling sort of anxiety that we will relieve you of.

Your full cooperation will be needed. Not only do you need to learn not to be anxious without good reason, but you need to learn some of the habits of pupils who make good marks, habits which so far your anxious emotions have prevented you from learning too.

You must learn to study regularly and easily, and you need to learn not to avoid school by poor attendance, i. e. if poor attendance is hindering your progress.

Two important learning principles are basic to what we will do. These are association and reinforcement. Association learning has occurred when a child begins to cry when he's taken to a dentist's office, even though he knows the visit is only to pay a bill.

If two contradictory responses occur often together, the stronger one will push the other aside so that it becomes the only response. Thus, if the child fears the pain of the dentist's needle, he may learn to put up with this, and his associated fear of the dentist's office may disappear if the dentist begins to give him candy



every time as soon as he comes in. That is, he learns to associate the dentist's office with the candy, instead of with the needle. He has learned a new attitude, and at the same time unlearned an old one.

Reinforcement occurs when the child learns to tie his own shoe-laces because whenever he does so he earns his mother's praise.

These principles apply to adults as well as to children.

Now in your case, you want to unlearn some emotional patterns, probably involving worry, anxiety, and unhappiness; and to learn some new behaviors which will bring you higher marks.

I have here two of the forms you filled out the other day. You can see that I have separated from the others the high anxiety items by underlining them in red. I'd like you to consider these with me so that we can lump some of them together into one or more lists, and so that we can see exactly what situations could cause these feelings in you. You can probably think of some things that weren't mentioned on these lists. However we will not get time for this until next week because we have two more things to do after this explanation.

I told you that when there are contradictory responses one tends to squeeze the other out. We will get you very thoroughly relaxed, and then I will describe one of the situations which normally makes you tense and anxious. As you vividly imagine this situation, either you will become tense and anxious, or you will remain relaxed; you cannot be both at once. You will learn how to stay relaxed, so that when we do this a few times the usual tension and anxiety in this situation will disappear, replaced by an automatic relaxation response. This new automatic response will then be part of you -- conditioned or



built into you. The old nervous tension will not occur again even in the real life situation, because it is no longer a part of the way you react. Your reaction will be the new, stronger response of relaxation.

Each anxious response that is removed in this way will reduce the anxiety you feel in the more disturbing situation which is next on the same list of disturbing situations. The process called generalization has this effect -- your new responses begin to bridge the gap between similar situations.

The last thing I want to explain today concerns the reinforcement principle of learning. This is the idea that we all tend to do those things which we are rewarded for. The reward reinforces or strengthens the behavior it is attached to. I am going to ask you to make a sort of contract with me. All the time we have for what you want done is ten all-too-short periods, so we will need every moment of these. The deal I am suggesting is this. I will give you so much time in counseling for so much good homework and study on your part. (If your attendance is not good, we'll work that into the deal to). What I am saying is, in effect, that we will make it easier for you to learn good achievement habits by rewarding this behavior with counseling time which you want.

So we shall be using the learning principle of association to help you get rid of unnecessary, harmful anxiety, and the principle of reinforcement to aid you in building new habits which you need to improve your school achievement.

Now that is probably at least enough theory. Do you get the general idea from what I have said?







3. Then give the first Relaxation lesson.
4. Arrange the Homework and Attendance Contract, and give enough Homework and Study Record Forms. Arrange for next week's interview.



## Relaxation Training

Paul (1966) describes relaxation training as follows:

### Training in progressive relaxation.

This is a most important procedure, and one that should be mastered. It should be explained to the subject that this technique will take some time (20 - 35 Minutes) at first, but as he learns, the time for inducing deep relaxation will be shortened. Training begins by having the subject systematically tense his gross-muscle systems, holding them tense until you say "relax", at which time the subject lets go immediately. If the muscles are first tensed, they will relax more deeply when they are released. Also explain that you want the subject to focus all his attention on each muscle system as you work through the various groups, so that after practice he will not have to tense the muscles first in order to achieve deep relaxation.

### The Method.

Seat the subject in an over-stuffed chair, with the therapist sitting slightly to one side. Legs should be extended, head resting on the back of the chair, and arms resting on the arms of the chair. No part of the body should require the use of muscles for support. Have the subject close his eyes to minimize external stimulation. The room should be quiet and lights dimmed if possible.

1. Instruct the subject to "make a fist with your dominant hand (usually right). Make a fist and tense the muscles of your (right) hand and forearm; tense until it trembles. Feel the muscles pull across your fingers and the lower part of your forearm." Have the subject hold this position for 5 to 7 seconds, then say "relax," instructing him to just let his hand go: "Pay attention to the muscles of your (right) hand and forearm as they relax. Note how those muscles feel as relaxation flows through them". (10 - 20 seconds). "Again, tense the muscles of your (right) hand and forearm. Pay attention to the muscles involved (5 - 7 seconds). "O.K., relax; attend only those muscles, and note how they feel as the relaxation takes place, becoming more and more relaxed, more relaxed than ever before. Each time we do this



you'll relax even more until your arm and hand are completely relaxed with no tension at all, warm and relaxed."

Continue until subject reports his (right) hand and forearm are completely relaxed with no tension (usually 2 - 4 times is sufficient).

2. Instruct the subject to tense his (right) biceps, leaving his hand and forearm on the chair. Proceed in the same manner as above, in a "hypnotic monotone," using the (right) hand as a reference point, that is, move on when the subject reports his biceps feels as completely relaxed as his hand and forearm. Proceed to other gross-muscle groups (listed below) in the same manner, with the same verbalization. For example: "Note how these muscles feel as they relax; feel the relaxation and warmth flow through these muscles; pay attention to these muscles so that later you can relax them again." Always use the preceding group as a reference for moving on.

3. Nondominant (left) hand and forearm -- feel muscles over knuckles and on lower part of arm.

4. Nondominant (left) biceps.

5. Frown hard, tense muscles of forehead and top of head (these muscles often "tingle" as they relax).

6. Wrinkle nose, feeling muscles across top of cheeks and upper lip.

7. Draw corners of mouth back, feeling jaw muscles and cheeks.

8. Tighten chin and throat muscles, feeling two muscles in front of throat.

9. Tighten chest muscles and muscles across back -- feel muscles pull below shoulder blades.

10. Tighten abdominal muscles -- make abdomen hard.

11. Tighten muscles of right upper leg -- feel one muscle on top and two on the bottom of the upper leg.

12. Tighten right calf -- feel muscles on bottom of right calf.





13. Push down with toes and arch right foot. -- feel pressure as if something were pushing up under the arch.

14. Left upper leg.

15. Left calf.

16. Left foot.

For most muscle groups, two presentations will suffice. Ask the subject if he feels any tension anywhere in his body. If he does, go back and repeat the tension-release cycle for that muscle group. It is often helpful to instruct the subject to take a deep breath and hold it while tensing muscles, and to let it go while releasing. Should any muscle group not respond after four trials, move on and return to it later. Caution: some subject may develop muscle cramps or spasms from prolonged tension of muscles. If this occurs, shorten the tension interval a few seconds, and instruct the subject not to tense his muscles quite so hard.

Although the word "hypnosis" is not to be used, progressive relaxation, properly executed, does seem to resemble a light hypnotic-trance state, with the subject more susceptible to suggestion. Relaxation may be further deepened by repetition of suggestions of warmth, relaxation, etc. Some subjects may actually report sensations of disassociation from their bodies. This is complete relaxation and is to be expected. Subjects should be instructed to speak as little as possible while under relaxation.

In bringing subjects back to "normal", the numerical method of trance termination should be used: "I'm going to count from one to four. On the count of one, start moving your legs; two, your fingers and hands; three, your head; and four, open your eyes and sit up. One -- move your legs; two -- now your fingers and hands; three -- move your head around; four -- open your eyes and sit up." Always check to see that the subject feels well, alert, etc., before leaving.

The subject should be instructed to practice relaxation twice a day between sessions. He should not work at it more than 15 minutes at a time.



and should not practice twice within any three-hour period. He should also practice alone. Relaxation may be used to get to sleep if practiced while horizontal; if the subject does not wish to sleep, he should practice sitting up. Properly timed, relaxation can be used for a "second wind" during study.

By the third session, if the subject has been practicing well, relaxation may be induced by merely focusing attention on the muscle groups, and instructing the subject to "concentrate on muscles becoming relaxed, warm," etc. However, if any subject has difficulty following straight suggestions, return to the use of tension-release. (Paul, 1966, pp. 118 - 120).



### Construction of the Hierarchies

A hierarchy is a list of similar or related situations which cause the client neurotic (or unrealistic) anxiety.

You have three sources from the client for hierarchy items: the Willoughby Personality Schedule, the IPAT Anxiety Scale, and the extra list and any stated items in discussion which you get directly from the student.

1. Underline in red in the questionnaires (or write out a list), those items marked high on anxiety or disturbance.

2. Look for themes or similarities of meaning which link certain items, and letter these, S, D, H, etc., according to theme.

3. Some of the hierarchy titles used by Wolpe and Lazarus (1966) are these: Examination series, Scrutiny series, Devaluation series, Discord between other people, Sickness and Injury (the latter two were divided into themes of External stimuli and Endogenous stimuli), Acrophobia, Claustrophobia, Agoraphobia, Basically objective fears (such as of death, accidents, fires, insanity, etc. -- but these blown up out of realistic proportion).

Some of these will more commonly come to the attention of school counselors than others, but they should be helpful in describing what is meant by grouping disturbing items into different themes.

4. This can mostly be done before you meet the student. In interviews, discuss and adjust your groupings, if necessary, with the client, add his new items and/or make up additional hierarchies.

5. From discussion, determine the most acute area of trouble,





and start with that group of statements. Ask the client to place them in order of their disturbing quality, with No. 1 the worst, No. 2 next, and so on.

6. Jot down these items in order, with the worst at the top, leaving a space between each. The list you now have is not adequate for desensitization to begin. You must have statements such as "I tend to get over-excited and 'rattled' in upsetting situations" (Answered - Yes), "Are your feelings easily hurt?" (Answered - 4). These statements are too general to be visualized. The completed hierarchy is an ordered list of concrete situations.

7. Discuss with the client now actual times when his feelings were hurt, or the type of situation in which they will be hurt. Make sure you understand him clearly. Jot these down under the ordered general statements. Under "Are your feelings easily hurt?" you might list: when my best friend walks home with someone else, when the boss where I have my part-time job criticizes me for taking so long to move a stack of canned goods, when my father didn't seem interested when I told him we won our basketball game.

You now have a longer list of situations which the client will be able to vividly imagine himself participating in, and you are ready to begin desensitization.

8. Start as soon as you can on the desensitization of this hierarchy. Spend some time each interview, however, building up the other hierarchies which you have isolated.

9. Note that the discussion of problems and situations for the hierarchies is carried on with the client in ordinary conversation,



and not under relaxation.

### Desensitization Procedures

The following outline should not be followed word for word, of course, but will, it is hoped, give a clear enough description of the specifics of the procedure that others may adapt it to their own style, the particular hierarchy or hierarchies being desensitized, and to the responses of the individual client. This outline is based upon an actual case treated by the author, with only enough details altered to hide the identity of the client.

Two hierarchies had been constructed involving Jim, which were labelled Devaluation (in these items he felt attacked by others) and Low Self-Esteem (in these items he seemed to be attacking himself). In later sessions, items from more than one hierarchy can be introduced into a single desensitization session, but for the first few sessions, as in the case to be presented, probably only one hierarchy will have been completed.

Here is the actual hierarchy used, with rough general headings, and situational subheadings:

#### Devaluation

1. Upsetting when people important to me are indifferent to me.
  - used to lean on older sister, who now pays Jim less attention, in favor of her future husband.
  - kids in track club who used to be friendly and who Jim helped, after Jim's absence for a time, now favor winners and are indifferent to him.



-- Jim is sorry to see some others who are also ignored.

2. Feelings easily hurt.

-- hurt if his horse went to the stable attendant in preference to him.

-- hurt when older sister teases him about something he might say, especially if she knows he is in a bad mood.

3. Family members criticize me a lot, especially Father.

-- Jim's sister is always telling him "Don't do it that way, do it this way." She criticizes the way he dresses, and does his hair.

-- Father says, "You talk too much; you tell people things about the family that you shouldn't."

Actually it is his little brother that does.

4. Hurt badly by criticism.

-- friend's criticism of a cupboard he had built.

5. Sometimes feel no one loves me.

-- usually when Father critical -- as when Jim talks when he's watching the news on TV.

-- when Mother backs up Father against Jim when Jim feels he has a just complaint against his little brother.

6. Bothered when watched at work or play.

-- when Jim playing golf, doesn't like Father to watch (points out mistakes, etc.).

-- same when playing tennis, people watching bother him.

With my first few clients, using desensitization, and this was one of them, I wrote out scenes beforehand, based upon the hierarchy.







More lately, with more knowledge of what is called for and more confidence, I have simply been thinking details of possible scenes over before the interview.

### Desensitization #1

I told Jim in a quiet voice that we would now start the desensitization. I said that there is nothing to worry about, because our objective will be to keep you feeling comfortable and relaxed. However, I told him, if you feel the slightest disturbance in any of the scenes I will describe, raise your right index finger as a sign to me. I told him that he should try to visualize the situations as though he were actually participating in them, not standing outside of himself as an onlooker, but to vividly imagine reliving the situations described.

Then I told him that he should get himself into a comfortable position in his chair, put his glasses on the desk, shut his eyes, let his head drop forward, and concentrate on the feeling that he gets when he has all his muscles relaxed. "Run over all your muscle systems in your mind, and feel the tension slip away." (Speaking quietly, slowly, and steadily.)

"Take a couple of minutes now, Jim, and feel as pleasantly relaxed as you have ever felt before in your relaxation practice." (Pause, until he appears to have accomplished this).

Scene 0. (A pleasant, neutral scene.) "Now, Jim, imagine that you are walking home with a friend. You are talking happily together. The day has gone well, it is sunny and warm, and you are enjoying the walk. (5 seconds pause). Now shut that scene out of your



mind completely. If you were able to imagine that scene clearly, do nothing, but if you could not, raise your index finger. (Pause). If you were able to switch that scene off when I asked you to, do nothing, otherwise, raise your finger. (Pause). OK, now just continue to relax, and feel the heaviness and warmth of complete relaxation. (15 seconds).

Scene 1. "Now imagine that you are playing a game of tennis. You are doing well. People are standing around talking. As the game gets close, however, you become aware of a small knot of people who have begun to watch you closely. (5 seconds pause). Now switch off that scene and simply relax. Think only of my voice, and the pleasant feeling of your relaxed state. (15 seconds).

"Now see yourself in that game again, Jim. (I describe it again). (10 seconds). Now shut that scene completely out of your mind, and return to complete relaxation. (30 seconds). Complete, heavy relaxation; see that there is no tension in your body anywhere.

Scene 2. "I want you to clearly and vividly imagine now, Jim, that you have been out riding, and as you return to the stable you notice that your father is standing at the stable watching you."

As Jim raised his finger at this point, I said, "OK, switch that scene completely off, and simply relax. Relax as deeply as you have done before, and feel the comfort of it." (30 seconds).

I decided to weaken this scene, and present the new scene only very briefly.

"Now that you are feeling fully relaxed again, Jim, imagine this time that you are returning from a ride to the stable, and as you approach you see your father there, talking to one of the attendants.





You wonder if he has been watching you. (3 seconds). Alright, turn off that scene now, and just relax." (30 seconds).

Then I repeated the last weakened scene, and held it for 5 seconds, before another 30 seconds of relaxation.

I then repeated the original scene, and had him hold it for 5 seconds. 30 seconds more relaxation.

The original scene again, with his father watching, and held for 10 seconds. The 30 seconds relaxation.

As a check, I then said, "If you were able to feel that your disturbance to that scene became less from the first presentation, through the weakened ones and to the last, do nothing. If it did not become less, raise your finger now." As he did not raise it, I said, "If you were able to remain comfortably relaxed through the last presentation of that scene, do nothing, otherwise, raise your finger now." Again he did not raise his finger.

Although I had had other scenes planned for presentation, I felt that he had had enough this first session, and had done well. Therefore, I terminated the desensitization.

"Alright, Jim, you have made good progress today, and in a few moments we will bring this session to an end. For a minute, however, feel again the warmth and pleasantness of your deep relaxation. (30 seconds to 45 seconds). Now as you do not want to move too quickly out of this state and back to normal, I am going to count to five. As I count, very slowly, I want you to begin moving parts of your body, until when I reach the count of five, you will be ready to raise your head, open your eyes, and feel alert and confident. Ok,





now, 1, 2, 3, 4, 5."

Then I discussed with Jim his reactions. Sometimes clients will later report some disturbance to a particular scene, even though they did not raise their finger. That should be noted, and repeated two or more times at the next session.

Desensitization should never be terminated on an unsuccessful item. If time runs out when a disturbed reaction is indicated, or the client has had enough and you do not wish to work through that one at that session, go back to the previous successful scene, and repeat it, and again induce full relaxation before terminating the session.

The next desensitization session should begin with a re-presentation of the last successful scene of the previous session.

#### Concluding Comments on Desensitization Procedure

1. This procedure, of course, is not original, but has been wholly taken from the work of Wolpe, as presented in three of the books named at the end of this manual. Any errors in the technique will be my own. I have presented a case of my own for two reasons. One is to give a sense of immediacy and the feeling that this method is workable by trained high school counselors working with high school students. The other is to try to make it possible for busy counselors to carry out the procedures involved in the present project without having to make an individual study of the original sources. Of course it would be preferable if the involved counselors could do this, and as much study of these original sources as counselors can make time for is strongly recommended.



2. If a client has trouble at the beginning of the procedure in visualizing the scenes, the following suggestions may help: present a number of neutral, pleasant scenes, instead of just one; or have him verbalize a situation as though describing a dream he has had.

3. The duration of a scene is usually on the order of 5 seconds but it may be varied according to several circumstances. It is quickly terminated if the patient signals anxiety by spontaneously raising his finger or if he shows any sharp reaction. Whenever the therapist has a special reason to suspect that a scene may evoke a strong reaction he presents it cautiously and for no more than one or two seconds. By and large, early presentations of scenes are briefer, later ones longer. A certain number of patients require 15 or more seconds to construct a clear image of a scene in their imagination. The character of the scene also necessarily plays a part in determining the time allowed for it. Striking a match needs less time than walking six blocks (Lazarus, 1964).

The interval between scenes also varies. It is usually between 10 and 20 seconds, but if the patient has been more than slightly disturbed by the preceding scene, the interval may be extended to one minute or more, during which time the patient may be given repeated suggestions to be calm, relaxed, and tranquil (Wolpe and Lazarus, 1966, pp. 84 - 85).

4. Wolpe and Lazarus (1966, pp. 83 - 84) suggests that items from up to four hierarchies may be used in a single desensitization session.

Three or four presentations of a scene are usual, but ten or more may be needed. The total number of scenes presented is limited mainly by availability of time and by the endurance of the patient (pp. 83 - 84).

5. Wolpe and Lazarus discuss "Some Snags and Pitfalls," briefly, in three categories:





- a. Difficulties of relaxation,
- b. Misleading or irrelevant hierarchies,
- c. Inadequacies of imagery.

This discussion will be found on pages 91 to 97 of Wolpe and Lazarus (1966).

6. To put it conservatively, the procedures described in this manual are amongst the leading well-tried new methods offering hope for a brighter outlook for the subject of counseling or psychotherapy. It is the author's hope and belief that trained counselors of the Edmonton Public School system will be less overawed by the details of a new approach than they will be eager to master important new techniques; and, if it should prove its worth and superiority to them, adopt it as their method of choice when dealing with disturbed students.

#### Assertive Training

This will not be used with all clients, and when it is used it will generally be in conjunction with systematic desensitization. It is called for, in the counselor's judgment, with the shy, inhibited student or with the effusive student whose expressions are, to others, clearly not genuine. This will often be the client who asks no question in class and volunteers no responses; who cannot risk friendly relations with members of the opposite sex; who perhaps exhibits little or no emotional self-expression, especially of anger or hostility; who does not stand up for his rights; who tends to be unable to interpret himself to others; who is anxious about personal relationships of all kinds.





This is often the passive-aggressive student. "There is in all a lack of integrity of expression of basic feelings and emotions" (Wolpe and Lazarus, 1966, p. 39).

Assertive training techniques involve the principles of both reciprocal inhibition and operant reinforcement (Ibid., ch. 4). Whenever the client successfully carries out an assertive task, this inhibits the anxiety of a weaker habitual, incompatible response just as the relaxation response does in systematic desensitization. Reinforcement is apparent as the client realizes the rewards of more adaptive behavior.

Procedures involve the full discussion with the client of the disadvantages suffered by the person who cannot express his emotions either at all or with integrity. The client may be asked to read Chapters 5, 6, and 11 of Salter's book, *Conditioned Reflex Therapy* (1949). This is an eloquent treatment of the subject by the pioneer of assertive training techniques.

The counselor may assign his client relatively easy tasks to be performed before the next interview, such as asking a simple question in class, saying Hi to a girl he likes, expressing his annoyance once with a classmate who bugs him, and so on. Such first actions must be carefully discussed and chosen. They must be easy enough to start with so that the client will undertake to try them. Then more and harder tasks may be assigned, as the anxiety formerly involved in self-assertion dissipates and the client gains confidence.

While being trained in assertive behavior, patients are told to keep careful notes of all their significant interpersonal encounters and to discuss them in detail with the therapist. It is necessary to know the



circumstances of the encounter, the patients' feelings at the time, the manner in which he reacted, how he felt immediately after, and his subsequent appraisal of the situation (Wolpe and Lazarus, 1966, p. 46).

The client may be asked to practice on the counselor, by describing the counselor as he truly sees and feels about him, complimentary or otherwise. If this seems too hard at first, it can be left until the student has succeeded in tasks which are easier for him.

Role-playing (behavior rehearsal) may be used to advantage.

It will be noted . . . that an additional consequence of assertive training is a changed self-concept. More adequate behavior elicits positive feedback from other individuals, and this may modify existing negative self-perceptions in a way that facilitates the performance of the new behavior (Ibid., p. 48).

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# Appendix C

1. The first part of the appendix is a list of the names of the authors of the papers included in the appendix.

2. The second part of the appendix is a list of the titles of the papers included in the appendix.

3. The third part of the appendix is a list of the abstracts of the papers included in the appendix.

4. The fourth part of the appendix is a list of the keywords of the papers included in the appendix.

5. The fifth part of the appendix is a list of the references of the papers included in the appendix.

6. The sixth part of the appendix is a list of the authors' addresses of the papers included in the appendix.

7. The seventh part of the appendix is a list of the authors' e-mail addresses of the papers included in the appendix.

8. The eighth part of the appendix is a list of the authors' phone numbers of the papers included in the appendix.

9. The ninth part of the appendix is a list of the authors' fax numbers of the papers included in the appendix.

10. The tenth part of the appendix is a list of the authors' web addresses of the papers included in the appendix.

11. The eleventh part of the appendix is a list of the authors' postal addresses of the papers included in the appendix.

12. The twelfth part of the appendix is a list of the authors' business addresses of the papers included in the appendix.

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13. The thirteenth part of the appendix is a list of the authors' home addresses of the papers included in the appendix.

14. The fourteenth part of the appendix is a list of the authors' work addresses of the papers included in the appendix.

15. The fifteenth part of the appendix is a list of the authors' personal addresses of the papers included in the appendix.

16. The sixteenth part of the appendix is a list of the authors' professional addresses of the papers included in the appendix.

17. The seventeenth part of the appendix is a list of the authors' academic addresses of the papers included in the appendix.

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18. The eighteenth part of the appendix is a list of the authors' research addresses of the papers included in the appendix.

19. The nineteenth part of the appendix is a list of the authors' teaching addresses of the papers included in the appendix.



## Student-Counselor Contract

For the period \_\_\_\_\_ (Day) \_\_\_\_\_ (Month) to \_\_\_\_\_ (Day) \_\_\_\_\_  
 \_\_\_\_\_ (Month)

Step 1

Agreed homework and study objective

for this week (6 out of 7 days) \_\_\_\_\_ min. per day

Agreed attendance objective

for this week \_\_\_\_\_ half days

Step 2

Interview time to be given for homework and study done

Agreed homework in minutes \_\_\_\_\_ min.

Actual homework in minutes \_\_\_\_\_ min.

Interview time, therefore, is

$$\frac{\text{_____ (actual)}}{\text{_____ (agreed)}} \times \frac{45}{1} \text{ min.}$$

Step 3

Interview time to be given for attendance

Agreed attendance in half-days \_\_\_\_\_  $\frac{1}{2}$  days

Actual attendance in half-days \_\_\_\_\_  $\frac{1}{2}$  days

Interview time, therefore, is

$$\frac{\text{_____ (actual)}}{\text{_____ (agreed)}} \times \frac{45}{1} \text{ min.}$$

Step 4

Interview time to be given for homework and attendance.



If good attendance is no problem, Step 3 will be omitted, and interview time to be given is as in Step 2.

If attendance is included in the contract, add interview times from Steps 2 and 3 and divide by 2 to give

$$\frac{(\text{Step 2 interview time}) + (\text{Step 3 int. time})}{2} = \underline{\hspace{2cm}} \text{ min.}$$

### Conditions

1. As the student progresses, more homework and study time should be agreed upon for the same amount of interview time.
2. Homework and study time is understood to mean time spent outside of regular course periods. It may include study periods in school, but only the time spent actually working in those periods. This time, together with time spent at home, will be recorded on the confidential Homework and Study Record sheets.
3. The counselor may provide interview time when very special circumstances such as illness have prevented the fulfillment of the contracted homework and study time or attendance by the student.
4. It is understood that the contracted homework and study time need not be undertaken in equal daily portions, although this will usually be desirable. The interview time will be awarded on the basis of the total for the period between interviews.
5. It is understood that this is a voluntary contract, entered into by the student with the counselor as one method of bringing about the student's achievement objectives.

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(Student)

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(Counselor)

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## Appendix D







# Appendix E

Table E.1: Summary of the results of the analysis.

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# Edmonton Public School Board

QUEEN ELIZABETH COMPOSITE HIGH SCHOOL

127

PRINCIPAL

H. F. WENDT, B.A., B.Ed.

9425 - 132 AVENUE  
EDMONTON, ALBERTA

CONFIDENTIAL

Dear \_\_\_\_\_:

This letter is in connection with the questionnaires you filled out the other day for a university research worker. You were assured that your answers would be kept confidential to that worker and perhaps one regular school counselor. They have been, and will be. I, who am sending you this letter, am the research worker mentioned.

You will likely be interested to know that your answers suggest that you tend to have more anxiety in the way you live and feel than do most of your fellow students.

The school records show two other interesting things about you.

1. Your IQ, as assessed by the Lorge-Thorndike Intelligence Test which is written in Grade X, was at the \_\_\_\_\_ percentile. This means that you are in the top \_\_\_\_\_ per cent of the school's Grade X or XI matriculation population in terms of academic ability.

2. Your average mark on the mid-term report for four core matriculation subjects was at the \_\_\_\_\_ percentile. This means that amongst Grade X or XI matriculation students you were in the bottom \_\_\_\_\_ per cent in terms of core academic achievement.

Your high measured anxiety level, together with the gap between your academic ability and your actual achievement, suggest that you may wish to participate in a special series of individual counseling sessions being offered to a small number of students in the school amongst those in the same general position as your own.

There will be ten weekly individual counseling sessions, conducted by members of the regular school counseling staff, with myself in the background helping with arrangements. The objectives in counseling will be to work with you to reduce your high tension or anxiety level, and to help you raise your school marks.

All students to whom this offer is extended may accept or turn it down on a completely voluntary basis. If you turn it down, this will not count against you, and no school record will be kept of your decision. The offer will be extended to another



one of those in a position like yours but whom the present staff of counselors could not otherwise get to until late in the school year. If you wish to accept, it will be with the understanding that you will do your best to work with the counselor to achieve the objectives mentioned, and that you will complete the full course of ten interviews.

As we wish to begin the special counseling interviews almost immediately, we can give you only a short time in which to decide. Will you, therefore, please fill in the spaces below and hand this in, in the enclosed envelope, at the counseling office before \_\_\_\_\_.

Thank you very much for filling in the questionnaires, and for your attention to this letter.

Yours sincerely,

W. R. Andrews,  
Graduate Student,  
University of Alberta  
(Formerly Dept. Head,  
Student Personnel Services,  
Victoria Composite High School)

I wish to accept the offer of ten special-purpose counseling sessions, as described above \_\_\_\_\_.

I do not wish to accept the offer of special-purpose counseling, and understand that this decision will not be made officially known or a matter of school record \_\_\_\_\_.

\_\_\_\_\_  
(Signature)  
Home Room No. \_\_\_\_\_

P.S. Most student who accept the counseling offered here will begin in the first or second week of school in January. Because of the limited number of counselors and because we do not know how many will accept this offer, a small number of students will need to wait a few weeks until the first group is finished.

Although a few will have to wait, then, these students will have the benefit of the counselors' experience in helping the first group.

The following is a list of the names of the persons who have been elected to the office of Justice of the Peace for the year 1900. The names are given in alphabetical order of their surnames.

1. J. H. Smith  
2. W. J. Brown  
3. T. R. Green  
4. M. L. White  
5. C. D. Black

The following is a list of the names of the persons who have been elected to the office of Justice of the Peace for the year 1900. The names are given in alphabetical order of their surnames.

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2. W. J. Brown  
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The following is a list of the names of the persons who have been elected to the office of Justice of the Peace for the year 1900. The names are given in alphabetical order of their surnames.

If you accept the offered special counseling, you will be notified in the first or second week of school in January either of your first appointment time, or that you are being asked to wait for your counseling.

R. A.

THE UNIVERSITY OF CHICAGO  
DIVISION OF THE PHYSICAL SCIENCES  
DEPARTMENT OF CHEMISTRY  
5301 SOUTH DICKENS STREET  
CHICAGO, ILLINOIS 60637





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